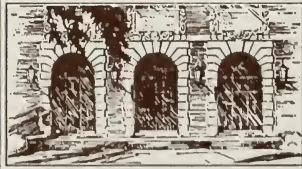


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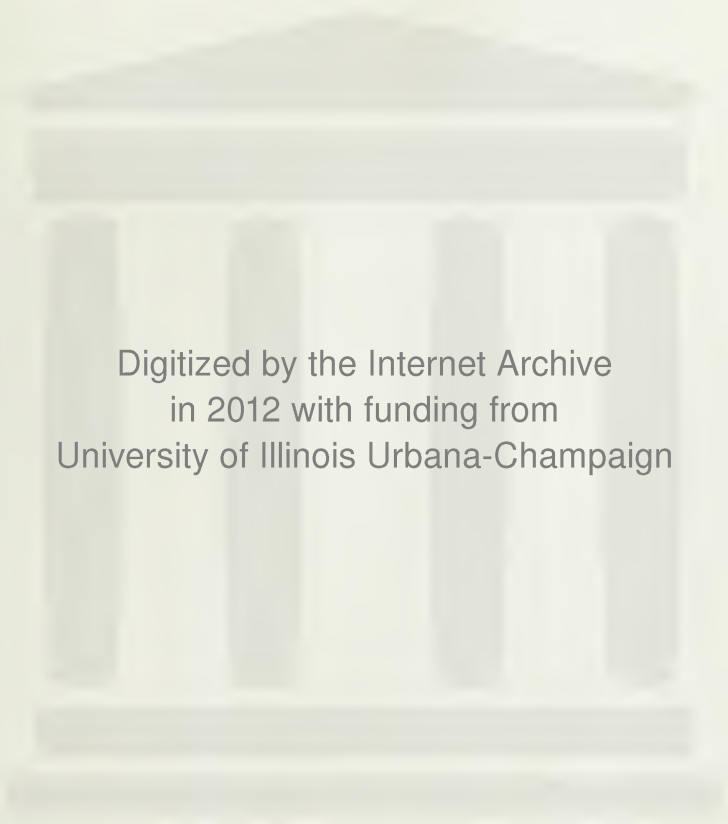
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UNIVERSITY OF ILLINOIS

PROVISIONAL DEVELOPMENT PLAN

1971-72 THROUGH 1980-81

PREPARED FOR PRESENTATION TO THE
ILLINOIS BOARD OF HIGHER EDUCATION
SEPTEMBER 1970

UNIVERSITY OF ILLINOIS

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I. INTRODUCTION

The University of Illinois presents in this document a provisional statement of its plan for educational development during the decade 1971-1981. It has been prepared partly in response to two requests from the Illinois Board of Higher Education for information about the long-range plans of state-supported colleges and universities:

1. The first resulted from approval by the Board of the following recommendation in Executive Director's Report No. 69 (September 30, 1968, p. 575): "That each institution submit to the Board as part of its 77th Biennial budget request, a) a long-range program and building plan for ten years into the future, and b) a general campus land-use plan for fifteen years into the future." In subsequent guidelines, the requested report has been designated as the "Long-Range Development Plan."

This action was taken in connection with the review of capital budget requests of the institutions for the 76th biennium (1969-71). With the change in the State's budgetary system from a biennial to an annual basis, the reports are to be submitted with the capital budget requests of the institutions for 1971-72 -- which are due in the Office of the Board of Higher Education following action by the respective governing boards at their September 1970 meetings.

2. The second request took the form of a "Master Plan - Phase III Questionnaire" concerning graduate and professional education. It was first received in March 1970, was subsequently modified by the Board's staff, and the revised form was returned to the Board office in May 1970. The information consisted mainly of statistics on enrollments and staff for the fall term of 1969-70 and corresponding projections for 1980-81. The data were presented by fields of study as classified in the Higher Education General Information Survey of the U. S. Office of Education. A list of anticipated new degree programs was also included.

This report represents the culmination of a comprehensive program of planning activities that was initiated by a letter from the President of the University to general officers and chancellors on December 17, 1968. In that communication, the Executive Vice President and Provost was assigned "responsibility for coordinating the planning activities of the three campuses and for preparing the report of the University's overall development plan."

In order to establish a common frame of reference for the planning task throughout the University, the Executive Vice President and Provost on January 6, 1969, issued a document entitled Guidelines to Long-Range Planning -- 1971-1986. A supplement to the Guidelines was also distributed under the title "Long-Range Planning for the Social Sciences" (January 29, 1969). In addition, several special reports provided background information and guidance for the planning task:

1. Supporting Analytical Studies -- a series of reports that included: (a) detailed University data for the period 1958-68 on enrollments, degrees conferred, staff and instructional load, and budgetary information; (b) national, State, and University data on the distribution of enrollment and degrees among twenty-four broad areas of study. These reports were prepared under the direction of the Associate Provost, with the collaboration of various staff offices.
2. Higher-Education Enrollment in Illinois: 1960-2000 -- With Comparative National Data and Supporting College-Age Population Information (December 1969). This document was prepared by the University Bureau of Institutional Research.
3. Proposals for the Expansion of Education in the Health Professions -- 1967-1980 (December 1967). This report had been submitted by the University to the director of the Board of Higher Education's study of education in the health fields.
4. Extension and Public Service in the University of Illinois, consisting of two reports prepared by Vice President Eldon L. Johnson: Phase I, November 1967; Phase II (with the assistance of Professor David Lazarus), August 1968.

The organization of planning activities varied among the three campuses, but several special committees were established at college and campus-wide levels. Planning conferences with wider faculty participation were held for discussions of planning assumptions, policies, and programs -- including a two-day conference at Allerton House on September 15-16, 1969, at the invitation of the President. Participants in the latter included faculty representatives of important committees of the Senates, campus-planning committees, campus administrative officers, general University officers, and members of the Board of Trustees.

Each of the three campuses submitted comprehensive reports of their long-range plans, which included discussions of the mission of the respective campuses, new directions and programs, enrollment projections, and estimates of required resources. Since the Guidelines had specified only the general kinds of material to be included in these reports -- and had set no arbitrary boundary conditions such as enrollment quotas or constraints upon program proposals -- there was considerable diversity in both format and content of the individual reports. Further, the aggregate of their enrollment projections turned out to exceed in certain respects the bounds of demographic realism.

Considerable discussion and adjustment has been necessary, therefore, in order to derive the "University's development plan" from the individual campus reports. It is believed that the present document reflects the agreements reached on modifications of the campus plans -- especially those concerning overall enrollment projections. Furthermore, there is general consensus regarding the statement of the mission of the University of Illinois within the State system of higher education -- a conception that has remained basically

unchanged in the formulations of faculty planning committees and administrative officers over the past twenty-five years. And the distinctive roles of the individual campuses within the University system -- as outlined in the chapters devoted to their respective programs -- are consistent both with the analysis of the goals and functions of the University as a whole appearing in this document and with the conceptions expressed in the campus reports.

These conclusions are supported by comments made on a draft of this report by administrative officers at campus and at general University levels. At the same time, there has not been sufficient time to permit widespread internal review of the document, particularly by faculty planning committees and officers at college level. While it is not anticipated that such review would result in fundamental changes in the plan, the opportunity for such an appraisal might well lead to significant changes in emphasis among programs or to alternative proposals for the achievement of educational goals.

It has been decided, therefore, to give this document the title "Provisional Development Plan," with the understanding that it will have careful study during the year and will be published in final form in June 1971. This will allow time for all major constituencies of the University -- faculty, students, administrative officers, alumni, trustees -- to contribute to the revision.

It is proposed, moreover, that the process of long-range planning be conducted henceforth on a continuing basis, and that biennial revisions of the University's development plan be issued. Organizational arrangements for the implementation of this proposal will be worked out during the present year.

II. THE ENROLLMENT OUTLOOK FOR HIGHER EDUCATION: UNITED STATES OF AMERICA AND STATE OF ILLINOIS

Projections of future enrollment in higher education are based primarily upon estimates of the size of the college-age population, the proportion of this group entering college, and the duration of attendance on the part of those admitted (including graduate and professional study). The last two of these three factors obviously will be influenced strongly by the availability of educational opportunities, which in turn will depend upon public policy relative to the development and utilization of society's human resources. These are the major issues to be considered in the present chapter, whose primary purpose is to develop an "enrollment model" for the State of Illinois that can serve as a frame of reference for the University's development plan.

In support of the continuing evolution of its Master Plan, the Illinois Board of Higher Education has issued two reports on future enrollment demand: (a) the first was submitted to the Board in 1963 by Committee A,¹ and its projections served as the demographic basis for Master Plan - Phase I; (b) the second was Committee M's report, published in 1966,² and its enrollment estimates were used in the formulation of Master Plan - Phase II. No subsequent reports or guidelines relative to enrollment have been issued by the Board or any of its committees.

For several reasons, it seemed desirable to conduct a further study of the enrollment prospects for higher education, and especially to extend

¹Master Plan Committee A, College Enrollments. A report to the Illinois Board of Higher Education, December 1963. (Committee A's projections were based on studies by P. P. Klassen and R. E. Corley of the University of Illinois at Chicago Circle.)

²Master Plan Committee M, Demography and Location. A report to the Illinois Board of Higher Education, 1966.

the projections beyond 1980 (the terminal year for Committee M's data). In the first place, actual enrollment figures were available for several years after the publication date of Committee M's report. Secondly, more recent figures were available from the Bureau of the Census on college-age-population estimates and projections. Finally, projections beyond 1980 were needed in order to respond to the request of the Board of Higher Education for "a general land-use plan for fifteen years into the future." From more recent population estimates, it had become likely that the steady rise in higher-education enrollment projected for the 1970's would be reversed during the following decade. Such a decline in enrollment would obviously have an important bearing upon decisions in the late 1970's about the need for expansion of higher-education facilities in Illinois -- including new campuses.

Accordingly, a new study was carried out by the University Bureau of Institutional Research (University of Illinois), and its report was issued in final form in December 1969.³ The population and enrollment projections included for the United States and for Illinois in the present chapter come mainly from that publication. In addition, comparative figures for certain other states have been compiled relative to (a) the validity of the "enrollment rate" selected for projecting Illinois on-campus enrollments and (b) the estimated distribution of Illinois enrollment as between undergraduate and postbaccalaureate levels of education. Finally, the basic premises underlying the enrollment model proposed for the State of Illinois are examined in the light of conflicting opinions and evidence regarding the future need for educated manpower.

³G. J. Froehlich and R. C. Carey, Higher-Education Enrollment in Illinois: 1960-2000. University Bureau of Institutional Research, University of Illinois, December 1969.

The following are the principal conclusions from the data and analyses presented in the remainder of this chapter:

1. College-age population in the nation and in Illinois will rise steadily during the next ten years, to a high point in 1980 (increases of 20 and 26 per cent, respectively, above their 1969 levels). Then for eight years there will be a steady decline in the number of college-age youths -- to a low point in 1988 -- when the national figure will reach approximately its 1970 level and that for Illinois its 1971 level. Both population curves then will start upward again and will pass their 1980 peaks before the year 2000.
2. Enrollment projections for the United States to the year 2000 follow a course essentially parallel to that for college-age population -- except that the low point in 1988-89 corresponds approximately to the enrollment projection for 1973-74. Illinois enrollment reaches a peak in 1982-83, followed by a decline to a low point in 1988-89 that is approximately the same as the enrollment level for 1976-77.

The fact that the enrollment declines during the 1980's do not reach as low levels, relatively, as the drops in college-age population is due to the counteractive effect of rising "enrollment rates" (the number of students, irrespective of age, per 100 college-age youths in the population).

3. The enrollment rates selected for Illinois enrollment projections parallel closely those developed by Master Plan Committee M (see footnote 2, p. 5), except that the rise in rate is somewhat slower for the present projections. By 1980, Committee M's rate had reached 78 per cent; whereas the 1980 rate used in the present report is 75.75 per cent, and the level of 78 per cent is not reached until 1985.

These enrollment rates are considerably higher than the terminal national rate of 54 per cent based upon U. S. Office of Education figures. Comparisons with the enrollment rates projected for states such as California and New York -- as well as other considerations -- indicate, nevertheless, that the values used for Illinois projections are realistic.

4. The following pattern of percentage distribution of Illinois enrollment by four educational levels for 1969-70 was used as a model for all future projections: Freshman-Sophomore, 58.85 per cent; Junior-Senior, 26.85 per cent; Graduate I-Professional, 11.60 per cent; Graduate II, 2.70 per cent.

The decision to project according to this constant pattern was reached after examination of conflicting evidence as to whether

the proportion of graduate-professional students would be likely to increase or decrease in Illinois during the next decade -- as the State moves towards a fully developed system of higher education. Since support for both hypotheses exists, it was decided that use of the 1969-70 distribution pattern for projections to 1980-81 would be a safe compromise.

5. In view of recent reports of the oversupply of doctoral personnel (especially those with the Ph.D. degree), a special section is devoted to a question of whether or not the level and diversity of society's total need for educated manpower is likely to justify the numbers of graduate-professional enrollments projected for Illinois during the next decade (pp. 26-29).

It is concluded from the evidence examined that during the next decade the magnitude of population increase, the parallel growth in the national economy, and the continuing increase in the complexity of society's problems are conditions likely to assure that the State's aggregate need for educated manpower will not be oversaturated by enrollment projections proposed in this document.

The justification for these conclusions is presented in the following pages in four sections: (a) college-age population (projections for the United States and Illinois from 1960 to 2000, based upon data issued by the U. S. Bureau of the Census -- pp. 9-12); (b) higher-education enrollment (United States and Illinois, with comparative enrollment rates for certain other states -- pp. 13-18); (c) enrollment distribution by educational level (for Illinois and certain other states -- pp. 19-25); (d) the need for educated manpower (pp. 26-29).

College-Age Population

The term "college-age population" is customarily defined by the U. S. Office of Education, and educational demographers generally, to be the total number of individuals who are 18, 19, 20, and 21 years of age at a given time. Obviously, this age range does not include all individuals who are enrolled in institutions of higher education during a particular term. Furthermore, its adequacy as a population base for use in projecting total higher-education enrollment has recently been questioned in a study sponsored by the Commission on Human Resources and Advanced Education.⁴ Evidence is cited in this volume that the age distributions of individuals actually enrolled in institutions of higher education vary considerably from year to year during the period from 1959 to 1965, and that the enrollment projections of the Office of Education based upon the size of the 18-21 age group during that period are too low. (Failure to secure a full count of fall-term enrollment seems also to be a contributing factor to that Office's underestimation of enrollment, as indicated by evidence to be presented later.) Nevertheless, it was decided to retain this age range as a reference base for the University's projections, partly in order to assure their comparability with those of the Office of Education and the majority of other studies.

The U. S. Bureau of the Census issues a series of publications entitled Current Population Reports, which is the principal source of information on college-age population. This series includes: (a) estimates of

⁴John K. Folger, Helen S. Astin, and Alan E. Bayer, Human Resources and Higher Education. Staff Report of the Commission on Human Resources and Advanced Education. Russell Sage Foundation, 1970 (p. 377). (This study was conducted under the auspices of the American Council on Education, the American Council of Learned Societies, the National Academy of Sciences-National Research Council, and the Social Science Research Council.)

the actual population, which are historical data corrected to the date indicated in a given issue; (b) projections of the population to a specified future date, which are periodically revised in the light of the latest population estimates. The figures presented in Table I (p. 11) on college-age population for the United States and for the State of Illinois are based upon the Census Bureau's population estimates corrected through 1969⁵ and upon unpublished projections based upon the 1969 estimates. (The latter were provided by the Population Division of the Bureau of the Census through direct communication with the University Bureau of Institutional Research, University of Illinois.)

The figures shown in Table I for the years 1971 through 1980 are college-age projections for children already born. Hence, the estimates of the college-age population for these years reflect the influences of mortality and migration rates only, and do not require assumptions as to fertility rate. For the years 1985 through 2000, however, it was necessary to select one of the Census Bureau's four series (A through D), which are based on different assumptions as to fertility rates. Following the advice given by Mr. Richard Irwin of the Population Division, the data based upon Series D were used -- this being the lowest fertility rate, one generally corresponding to the rate prevailing during the fifty years preceding the large postwar rise in fertility but excluding the depression years.⁶

⁵U. S. Bureau of the Census, Current Population Reports, Series P-25, No. 441, "Estimates of the Population of the United States, by Age, Race, and Sex: July 1, 1967, to July 1, 1969," U. S. Government Printing Office, Washington, D. C., March 19, 1970.

⁶The difference between the four series and the reasons for selecting Series D as the basis for projection are described in the U. S. Bureau of the Census' Current Population Reports, Series P-25, No. 441, March 19, 1970. (It is understood that the Bureau is now developing Series E -- based upon an even lower fertility rate than Series D -- to reflect the more recent studies showing a further downward trend in this aspect of the birth rate.)

TABLE I

COLLEGE-AGE POPULATION: UNITED STATES AND ILLINOIS^{a,b}

Year	United States ^c		Illinois ^d		Ill./U.S. (Per Cent)
	Number	Index No., Base 1960	Number	Index No., Base 1960	
1960	9,550,000	100	480,000	100	5.03
1968	14,372,000	150	696,000	145	4.84
1969	14,199,000	149	689,000	144	4.85
1971	14,729,000	154	720,000	150	4.89
1972	15,148,000	159	747,000	156	4.93
1973	15,567,000	163	772,000	161	4.96
1974	15,917,000	167	796,000	166	5.00
1975	16,236,000	170	816,000	170	5.03
1976	16,497,000	173	831,000	173	5.04
1977	16,671,000	175	844,000	176	5.06
1978	16,823,000	176	853,000	178	5.07
1979	17,001,000	178	865,000	180	5.09
1980	17,071,000 ^e	179	870,000 ^e	181	5.10
1985	15,503,000	162	781,000	163	5.04
1988	14,410,000 ^f	151	723,000 ^f	151	5.02
1990	14,559,000	152	730,000	152	5.01
2000	18,051,000	189	907,000	189	5.03

^aFrom the following report: G. J. Froehlich and R. C. Carey, Higher-Education Enrollment in Illinois: 1960-2000, University Bureau of Institutional Research, University of Illinois, December 1969 (pp. 4-5).

^b"College-age population" is defined here as the total number of youths 18, 19, 20, and 21 years of age.

^cData through 1969 are corrected estimates by the U. S. Bureau of the Census (see footnote number 5 on p. 10). The figures for 1971 and later years are unpublished projections of the Census Bureau based on the population estimates for 1969 and assuming the Bureau's Series D fertility rate.

^dIllinois college-age data are based upon the latest U. S. Bureau of the Census report available on population by states (Current Population Reports, Series P-25, No. 375, October 3, 1967). See Froehlich and Carey, op. cit., for the method of derivation.

^eThe year 1980 marks the high point of college-age population growth to that date, after which an eight-year decline ensues.

^fThe year 1988 marks the low point of the eight-year drop in college-age population.

The college-age data for Illinois parallel closely those for the United States, as the figures in Table I show; with minor variations, the Illinois figure for each year is approximately five per cent of the national total. By far the most significant facts shown in Table I, however, are the following: (a) the progressive rise throughout the 1970's to a peak in 1980; (b) the ensuing eight-year decline that reaches a low point in 1988. (The figures for all years omitted from Table I between 1980 and 2000 are included in the report by Froehlich and Carey, Higher-Education Enrollment in Illinois: 1960-2000, op. cit.) The national college-age population for 1988 is almost identical to the 1970 figure (omitted from Table I), whereas the Illinois figure of 723,000 for 1988 is only slightly higher than that for 1971. Since the size of the college-age population is reflected directly in higher-education enrollment, such declines would have obvious implications for educational planning for the late 1970's and the 1980's.

Comparisons with the college-age-population projections used by Master Plan Committees A and M might be in order at this point. Committee A's projections were consistently higher than those made by Committee M, while the latter's figures for the period 1968 through 1977 were substantially the same as those shown in Table I. But Committee M made somewhat higher projections than those in Table I for the years 1978 through 1980.

Higher-Education Enrollment: United States and Illinois

It was decided to use "on-campus" enrollment for the University's projections rather than "degree-credit" enrollment (which includes extension courses) or "total" enrollment (which includes all noncredit and credit courses offered both on and off campus). For purposes of estimating the need for facilities, especially, the on-campus figures are the critical ones; furthermore, fairly stable ratios may be assumed to exist among all three types of enrollment counts.⁷

United States. The enrollment figures presented in Table II (p. 14) are fall-term headcounts for the years shown between 1960 and 2000 in Table I. The United States data were derived from figures published by the U. S. Office of Education for the years from 1960 through 1976 (actual data for 1960 through 1968, and projected data for the years 1969 through 1976). The projections for the years beyond 1976 were calculated by using the formula given by the U. S. Office of Education. It assumes that the "enrollment rate" (i.e., the number of on-campus students, irrespective of age, per 100 college-age youths in the population) will follow the upward trend shown during the period 1956-68 until 1980-81; thereafter, it is assumed that this rate will remain relatively constant to the year 2000.

The recent publication by Folger, Astin, and Bayer⁸ claims that the enrollment projections of the U. S. Office of Education are too low. For

⁷ G. J. Froehlich and R. C. Carey, op. cit., give these relationships among the three types of enrollment counts: (a) the Office of Education's 1968 figures for "total" fall-term enrollment are to be multiplied by .922139103 to give "degree-credit" enrollment; (b) multiply the "degree-credit" figures by .93670868 to reduce them to "on-campus" enrollment.

⁸ John K. Folger, Helen S. Astin, and Alan E. Bayer, Human Resources and Higher Education. Staff Report of the Commission on Human Resources and Advanced Education. Russell Sage Foundation, 1970 (p. 386).

TABLE II

TOTAL ON-CAMPUS ENROLLMENT (HEADCOUNT) AND ENROLLMENT RATE --
1960-1985: UNITED STATES AND ILLINOIS^a

Fall Term	United States ^b		Illinois ^c	
	Number	Rate ^d	Number	Rate ^d
1960	3,355,971	35.14	200,092	41.69
1968	6,388,686	44.45	378,514	54.38
1969	6,592,556	46.43	409,552	59.44
1971	7,144,277	48.50	476,928	66.24
1972	7,496,480	49.49	504,225	67.50
1973	7,849,619	50.42	524,960	68.00
1974	8,186,834	51.43	545,260	68.50
1975	8,512,908	52.43	559,368	68.55
1976	8,803,188	53.36	569,651	68.55
1977	8,943,029	53.64	593,754	70.35
1978	9,074,596	53.94	615,440	72.15
1979	9,198,717	54.11	639,668	73.95
1980	9,240,090 ^e	54.13	659,025	75.75
1982	9,203,876	54.15	666,668 ^e	77.25
1985	8,399,525	54.18	609,180	78.00
1988	7,808,779 ^f	54.19	569,323 ^f	78.75
1990	7,890,978	54.20	577,430	79.10
2000	9,792,668	54.25	725,600	80.00

^aFrom the report by G. J. Froehlich and R. C. Carey, Higher-Education Enrollment in Illinois: 1960-2000 (University Bureau of Institutional Research, University of Illinois, December 1969, pp. 16-17).

^bThe national figures through 1968 represent actual enrollments while those for later years are projections. See Froehlich and Carey, op. cit. (p. 15) for the sources of these data in U. S. Office of Education reports.

^cThe Illinois figures through 1969 represent actual enrollments, as reported by G. J. Froehlich and A. R. Lewandowski, Enrollment in Institutions of Higher Learning in Illinois: 1969 (University Bureau of Institutional Research, University of Illinois, November 1969).

^d"Enrollment rate" is defined here as the number of on-campus students (irrespective of age) per 100 college-age youths (ages 18, 19, 20, 21) who are enrolled in courses creditable towards a higher-education degree or certificate.

^eNational enrollment is projected to reach an initial peak in 1980, while the peak for Illinois is predicted for 1982.

^fThe enrollment decline during the 1980's reaches its lowest level in 1988, both for the nation and for Illinois.

example, for 1975-76 the 1966 edition of USOE's Projection of Educational Statistics to 1975-76 estimated degree-credit enrollment at 8,995,000; but Folger et al. estimate the United States total to be 10,423,000 for 1975-76. The difference of 1,428,000 would indicate that the projection should be 16 per cent higher than the Office of Education figure. Independent confirmation of the fact and the size of USOE's underestimation of enrollment has been provided by Dr. G. J. Froehlich through a comparison (unpublished) of USOE's reported fall-term enrollment for Illinois in 1969 with the corresponding total from the survey of enrollment conducted by the University Bureau of Institutional Research (University of Illinois). The latter reported 424,719 degree-credit enrollments for Illinois, whereas the USOE total was 365,200 -- a difference of 59,519, which is 16.3 per cent of the USOE figure.

If the Office of Education's actual enrollment counts and projections are in error to this extent, the enrollment rates shown in Table II for the United States are correspondingly underestimated.

As expected from the population projections, national on-campus enrollment is predicted to increase throughout the 1970's, reaching a peak in 1980; thereafter, an enrollment decline to a low point in 1988 is indicated. This drop would bring the total on-campus enrollment down to approximately the level of 1973-74.

Illinois. The actual enrollment figures shown for Illinois in Table II through 1969 are taken from the annual surveys made by the University Bureau of Institutional Research (University of Illinois). The projected enrollments for 1971 through 2000 are based upon enrollment rates that are substantially the same as those developed by Master Plan Committee M --

with adjustments to allow for the subsequent impact of intensification of the Vietnam war. The net effect of these adjustments is a somewhat lower rate of increase in the enrollment rate than Committee M projected, viz.: Committee M estimated that enrollment would be 78.1 per cent of the college-age population by 1980, whereas 78.0 per cent is not reached until 1985 in the series calculated by the University Bureau of Institutional Research.

The enrollment projected for Illinois shows a decline during the 1980's to a low point in 1988 -- paralleling the national trend. This represents a drop to approximately the Illinois level of 1976, whereas the low point for the national series is almost identical to its 1973 figure.

Is the projected increase in enrollment rate too high? Committee M recognized that its enrollment rate of 78.1 per cent for 1980 might be considered to be too high, but listed the following considerations in justification of that figure and the preceding series:⁹

- "1. The new G. I. Bill.
- "2. The government loan and scholarship programs.
- "3. The larger number of junior colleges with the resultant nearby availability of facilities and programs.
- "4. The retraining and new training needed for holding available jobs.
- "5. The constantly increasing educational attainment needed to obtain employment in many jobs.
- "6. Our increasingly affluent society economically, with the net result that more money will be available to parents for sending their children to college, as well as for their own higher education.

⁹Master Plan Committee M, Demography and Location. A report to the Illinois Board of Higher Education, 1966 (pp. 9, 11).

"7. A possible better motivation of economically underprivileged students brought about by enriched programs such as the following in pre-college schools: increased guidance and counseling services, special training for teachers of the underprivileged students, enrichment of academic programs both during the normal school year and summer, special programs for students in underprivileged areas, and summer remedial programs.

"8. The increased levels of educational attainment by the general population create a demand for increased educational opportunities beyond high school by the same general population.

"9. The increased proportion of women entering the labor force."

Certain of these factors might not argue as persuasively today for Committee M's peak enrollment rate of 78.1 per cent as they seemed to do in 1966. Allan M. Cartter, for example, thinks that the size of the untapped pool of high school graduates may be considerably smaller than has commonly been assumed -- despite the growing emphasis upon education for the economically and educationally disadvantaged.¹⁰

A comparison of the enrollment rates projected for the State of Illinois with those of certain other states might throw some light on the probable validity of the rates shown for Illinois in Table II. The index of enrollment rates varies very widely among the fifty states above and below the figures shown in Table II for the United States. For example, for 1960 -- when the United States' rate was 35.14 and that for Illinois was 41.69 -- the following rates prevailed for these four other states: California, 47.62; Florida, 26.24; New York, 47.62; Utah, 59.33. Assembling estimates of college-age population and enrollment projections for these four states

¹⁰ Allan M. Cartter, "The After Effects of Putting the Blind Eye to the Telescope." Paper presented at the 25th National Conference on Higher Education, sponsored by the American Association for Higher Education, Chicago, March 3, 1970.

from various sources, Froehlich and Carey¹¹ report the following enrollment rates:

	<u>Illinois</u>	<u>California</u>	<u>Florida</u>	<u>New York</u>	<u>Utah</u>
1965	50.48	56.20	39.80	57.72	78.92
1970	64.64	75.98	--	66.71	81.21
1975	68.55	81.53	52.07	80.46	84.90
1980	75.75	--	58.31	85.54	--

Thus, the projections for California, New York, and Utah yield enrollment rates by 1975 that are considerably above the 1980 figure for Illinois. This fact does not, of course, establish the validity of the Illinois rate and enrollment projections. It only shows that, in comparison with the planning assumptions being made by other states that are moving towards fully developed systems of higher education, the enrollment rates proposed for Illinois are not extravagant.

On this general point, reference should be made again to the probable underestimation of the enrollment rates shown in Table II (based upon U. S. Office of Education data for the United States). If the latter's enrollment rate for 1968 is too low to the extent suggested above (an underestimate of 16 per cent of the USOE's reported value), then the figure of 44.45 per cent in Table II would be raised to about 51.50 per cent -- which is considerably closer to the Illinois rate of 54.38 per cent for that year (derived from the annual enrollment survey conducted by the University Bureau of Institutional Research, University of Illinois).

¹¹G. J. Froehlich and R. C. Carey, Higher-Education Enrollment in Illinois -- 1960-2000. University Bureau of Institutional Research, University of Illinois, December 1969 (p. 21).

Enrollment Distribution by Educational Level

For purposes of long-range educational planning, the prediction of the distribution of enrollment by educational level is second only in importance to the estimation of total enrollment. This is especially true for the aspects of higher education involved in Master Plan - Phase III, since the graduate and professional levels are much more costly than undergraduate education. At the same time, the advanced levels of higher education are so critically essential to the public welfare in our complex society that a state like Illinois cannot afford a substantial underestimation of its long-range need for high-level scientific and professional manpower.

Comparisons of 1968-69 distributions of enrollment by educational level, for the nation and for selected states. Unfortunately, the U. S. Office of Education does not classify its fall-term enrollment data by the four educational levels used since 1965 by the University Bureau of Institutional Research (University of Illinois) in its annual survey of fall-term enrollment in Illinois institutions of higher education (Lower Division, Upper Division, Graduate I-Professional, Graduate II). Furthermore, the data published by the Office of Education have not been classified by educational level consistently from year to year. But it has been possible to assemble the figures shown in Table III (p. 20) for the fall term of 1968, where enrollments are classified into two levels: "Undergraduate" and "Graduate-Professional." The percentages of total enrollment in these two categories are shown for the United States, Illinois, and five comparison states (California, Michigan, New York, Ohio, Wisconsin).

The breakdowns as between undergraduate and graduate-professional enrollments are shown both for total enrollment (including courses without

TABLE III

PERCENTAGE COMPARISONS OF UNDERGRADUATE AND GRADUATE-PROFESSIONAL ENROLLMENTS: UNITED STATES AND SELECTED STATES, 1968 FALL TERM

States	Total Fall-Term Enrollment ^a		Degree-Credit Enrollment ^b	
	Under-graduate	Graduate-Profes-sional	Under-graduate	Graduate-Profes-sional
United States	86.2%	13.8%	85.0%	15.0%
Illinois	83.2%	16.8%	81.6%	18.4%
California	88.9%	11.1%	86.4%	13.6%
Michigan	84.9%	15.1%	83.1%	16.9%
New York	78.3%	21.7%	78.1%	21.9%
Ohio	88.1%	11.9%	87.6%	12.4%
Wisconsin	88.8%	11.2%	87.9%	12.1%

^aThese percentages relate to total fall-term enrollments, including courses without degree credit -- as reported by the U. S. Office of Education in Opening Fall Enrollment in Higher Education, Part A -- Summary Data 1968, February 1969.

^bThe degree-credit enrollment for 1968 includes approximately 92.2 per cent of the total enrollment, for the United States as a whole. For the individual states, the corresponding percentages of the total state enrollment are: Illinois, 91.4 per cent; California, 81.5 per cent; Michigan, 89.3 per cent; New York, 99.1 per cent; Ohio, 95.6 per cent; Wisconsin, 92.7 per cent.

degree credit) and for degree-credit enrollment. As might be expected, the graduate-professional percentages run somewhat higher for degree-credit than for total enrollment.

For the United States as a whole, 15 per cent of degree-credit enrollment is shown for the graduate-professional and 85 per cent for the undergraduate level. For the individual states, the graduate-professional percentage ranges from 12.1 per cent (Wisconsin) to 21.9 per cent (New York). Illinois' percentage is 18.4, which is second highest in the table to that for New York.

These figures are difficult to interpret, since the factors producing them may have varying significance from one state to another. For example, the fact that New York and Illinois stand highest in the list in percentage of graduate-professional enrollment may be due partly to the student migration patterns of the two states -- which are similar in ways that presumably would tend to produce relatively low undergraduate and high graduate enrollment percentages. Each had in 1968 a substantial net export of undergraduates to other states (Illinois, -37,977; New York, -56,017) and a net import of graduate students.¹² California, by contrast, had a net import of 3,886 undergraduates. (All three imported more graduate students than they exported to other states.) But perhaps the most influential factor in accounting for the difference between Illinois-New York and California is the latter's highly developed junior-college and state-college systems, which would tend to maximize its opportunities for undergraduate education and hence to weight its enrollment distribution rather heavily towards the "undergraduate" end of the spectrum.

¹²U. S. Office of Education, Residence and Migration of College Students, Fall 1968: Basic Matrix Tables. Scheduled for publication in August 1970.

Illinois enrollment by educational levels. The distribution of enrollment by the four educational levels used for Illinois institutions is shown in Table IV (p. 23), as follows: (a) actual on-campus enrollments for the fall term of 1968-69 and 1969-70; (b) on-campus enrollment projections for selected years during the period from 1971 to 2000. The enrollment totals in the last column of the table are those already given for these years in Table II.

The percentage distributions of actual enrollment by educational level are substantially the same for the fall terms of 1968 and 1969, although there is a slightly higher total percentage of undergraduates for 1969 than for 1968.¹³

After considering various sets of assumptions that might be used to generate changing patterns of distribution by levels for future projections, all of them were rejected and the percentage pattern shown in Table IV for 1969 was used in calculating the distributions for 1971 and later years.

One of the rejected assumptions would have called for projecting an increasing proportion of Illinois graduate-professional students over the next decade. It is based on the fact that in recent years the rates of increases in degrees granted in the United States show an ascending order of magnitude from baccalaureate to master's to doctoral degrees over the ten-year period from 1958 to 1968. More specifically, figures published by the

¹³It might be wondered why the division of Illinois enrollment as between total graduate and total undergraduate headcounts is different in Table IV from the breakdown for either of the two sets of similar figures given for Illinois in Table III. The reason is that the percentages in Table IV relate to on-campus enrollments, whereas those in Table III represent "total" and "degree-credit" enrollments. The corresponding graduate-professional percentages are: 14.77 per cent "on-campus," 16.80 per cent "total," and 18.40 per cent "degree-credit" enrollments.

TABLE IV

ON-CAMPUS ENROLLMENT IN ILLINOIS INSTITUTIONS OF HIGHER EDUCATION
DISTRIBUTED BY EDUCATIONAL LEVEL^{a, b}

Fall Term	Lower Division	Upper Division	Graduate I-Professional ^c	Graduate II ^d	Total
1968					
Number	219,358	103,149	45,504	10,503	378,514
Per cent	57.96%	27.25%	12.02%	2.77%	100.00%
1969					
Number	240,998	109,978	47,504	11,072	409,552
Per cent	58.85%	26.85%	11.60%	2.70%	100.00%
1971	280,672	128,055	55,324	12,877	476,928
1972	296,736	135,385	58,490	13,614	504,225
1973	308,939	140,952	60,895	14,174	524,960
1974	320,886	146,402	63,250	14,722	545,260
1975	329,188	150,190	64,887	15,103	559,368
1976	335,240	152,950	66,080	15,381	569,651
1977	349,424	159,424	68,875	16,031	593,754
1978	362,186	165,246	71,391	16,617	615,440
1979	376,445	171,751	74,201	17,271	639,668
1980	387,836	176,948	76,447	17,794	659,025
1985	358,502	163,565	70,665	16,448	609,180
1988	335,047	152,863	66,041	15,372	569,323
1990	339,818	155,040	66,981	15,591	577,430
2000	427,015	194,824	84,170	19,591	725,600

^aThe data for 1968-69 and 1969-70 represent actual enrollment headcounts, taken from the following report issued by the University Bureau of Institutional Research (University of Illinois): G. J. Froehlich and A. R. Lewandowski, Enrollment in Institutions of Higher Learning in Illinois: 1969.

^bBoth numbers and percentages by levels are shown for the fall of 1968 and of 1969. The 1969 percentage distribution was used in calculating the projections shown for 1971 and later years.

^cThe category "Graduate I" includes all graduate students who have not earned the equivalent of 32 semester or 48 quarter hours of graduate credit. The category "Professional" includes only students enrolled in "postbaccalaureate" professional curricula (e.g., dentistry, law, medicine, veterinary medicine).

^dThe category "Graduate II" includes all students who have earned at least 32 semester hours or 48 quarter hours of graduate credit.

U. S. Office of Education show the highest percentage increase for doctoral degrees (148 per cent), the next highest for master's degrees (127 per cent), and the lowest increase for baccalaureate degrees (88 per cent).¹⁴ Assuming that degree trends are correlated highly with enrollment trends, and that these differential rates would continue for the next decade, an increasing percentage of graduate-professional enrollment as compared with undergraduate would be projected.

A contrary argument would appear to be supported by the enrollment distribution by levels for California. That state probably has the most fully developed system of higher education in the nation; and available data (see Table III) suggest that this produces an enrollment distribution by level having a lower-than-average percentage of graduate-professional enrollment. If the California experience is generalizable to Illinois, it might be expected that as the latter approached California's developmental status as regards availability of educational opportunity, the percentage distribution would change towards an increasing proportion of undergraduate and a decreasing percentage of graduate enrollment. The validity of this argument is problematical, however, because of the two additional factors about Illinois mentioned above, whose future impact upon the distribution of enrollment among educational levels is difficult to assess: (a) Illinois' status as a net "exporter" of college students (whose "emigrants" in the future might be increasingly turned away by institutions in other states and become better-than-average prospects for graduate study back home); (b) the higher proportion of private universities in Illinois than in California. Both sets of conditions could

¹⁴United States Office of Education, Projections of Educational Statistics to 1977-78. OE-10030-68, 1969 (p. 31).

operate to maintain Illinois' relatively high proportion of graduate and professional students, in the face of growing lower-division enrollment.

In sum, the foregoing facts and analysis have disclosed no evidence that would invalidate the decision to use Illinois' 1969-70 distribution of enrollment by levels as the pattern for projecting enrollments throughout the ten-year period from 1971-72 to 1980-81. Instead, certain of the evidence cited lends support to this planning assumption -- as do the additional considerations outlined in the following discussion of the future need for educated manpower.

The Need for Educated Manpower

The enrollment projections proposed in the preceding pages for the State of Illinois rest on two basic premises: (a) that the number of Illinois youths seeking higher education -- whether as a means to self-fulfillment or in preparation for productive employment, or both -- will be sufficient to meet the projections; (b) that the level and diversity of society's total need for educated manpower will fully require the numbers of enrollments projected for the ten-year period. The probable magnitude of population increase, the parallel growth in the national economy, and the continuing increase in the complexity of society's problems -- all these conditions seem likely to assure that in the aggregate the State's need for educated manpower would not be oversaturated by the output of the program of expansion outlined in the foregoing pages.

This judgment is made in the face of a rising tide of recent reports in news media and in professional journals about the oversupply of Ph.D. graduates in various fields. Such terms as "academic recession" and "the doctoral glut" have become increasingly frequent during the past year. Allan M. Cartter, for example, has been predicting for some time a balance of supply and demand for doctoral graduates in the 1970's; and in the paper already cited¹⁵ he asserts flatly that the shortage of Ph.D. holders we have lived with for most of thirty-five years is over. And he thinks that graduate schools may be entering a period of excess capacity and overproduction.

Undoubtedly, an undetermined number of recent doctoral graduates in certain fields have been unable to find jobs. What is not clear about

¹⁵ Allan M. Cartter, "The After Effects of Putting the Blind Eye to the Telescope." Paper presented at the 25th National Conference on Higher Education, sponsored by the American Association for Higher Education, Chicago, March 3, 1970.

these reports, however, is the extent to which no jobs whatever were available in these fields or whether it was a shortage of the kinds of jobs sought in preferred locations.

The recently published volume by Folger, Astin, and Bayer¹⁶ is a timely contribution to the discussion of supply and demand for educated manpower -- bringing to this controversial subject the broad perspective of systematic manpower analysis and by far the most comprehensive body of information yet assembled on the development and utilization of individuals of high intellectual ability. Issued after several years of study -- under the sponsorship of the American Council on Education, the American Council of Learned Societies, the National Academy of Sciences-National Research Council, and the Social Science Research Council -- this monumental work provides both broad perspective and specific data that are useful in long-range educational planning.

In discussing the concept of "demand" for college-educated manpower, for example, Folger et al. emphasize the distinction between demand (the number of jobs available at a given time in an occupation) and need (the number of persons required to provide a desirable level of service). Long-range planning should at least be oriented towards meeting individual and social needs -- as these might be articulated in terms of state or national goals -- not solely towards meeting projections of current levels of demand. This distinction is particularly important to higher education at the present time -- a period of economic recession, growing unemployment, severe reductions in federal support for research and other phases of education, and general

¹⁶ John K. Folger, Helen S. Astin, and Alan E. Bayer, Human Resources and Higher Education. Staff Report of the Commission on Human Resources and Advanced Education. Russell Sage Foundation, 1970.

retrenchment in the cultivation of society's human resources. It would not seem to be in the long-term public interest to project the future development of higher education in terms of the manifest parameters of the current indicators of "demand."

Folger, Astin, and Bayer present an analysis of the balance between the college graduates needed during the period 1965-75 to achieve national goals (as estimated in the National Goals Project) and the estimated supply. The results indicated a big gap between the available supply and the estimate of needs (op. cit., p. 37).

With respect to the employment outlook for college teaching, Folger et al. present a more optimistic picture than Cartter and others who have looked rather more at "demand" than at "need." They note, for example, that average teaching load nationally increased from 15 students per faculty member in 1955 to 18 by 1965; and that only 58 per cent of the regular faculty in the arts and sciences in four-year colleges and universities had Ph.D. degrees. These conditions have developed because of the acute shortages of doctoral personnel in the past. As the supply increases, improvement in the quality of faculties can be expected, and should be sought.

These authors also reviewed the probable demand (not "need") in seven professions (engineering, elementary and secondary school teaching, law, medicine, nursing, social welfare occupations, and the performing arts). In all except school teaching and the performing arts, the output of graduates falls short of meeting the estimated demand ("need" was not at issue in this analysis).

In general, it may be concluded that the Folger-Astin-Bayer volume does not provide much support for the highly pessimistic outlook of Cartter

and others regarding the long-term demand -- and certainly not as regards the need -- for educated manpower. It will always be difficult in a free society to adjust supply and demand relationships so as to avoid surpluses and deficits of individuals educated for highly specialized vocations; and short-run hardships will inevitably result. But in the long run, these imbalances will be overcome -- sometimes through the upgrading of the quality of manpower in an occupation by the displacement of poorly trained by better-educated individuals.

In educational planning for the next decade, a more serious problem than the "overproduction" of highly educated manpower in certain fields -- which may well occur unless "planned" higher education as a whole is scheduled for continuing "depression" -- is likely to be the failure to meet the needs generated by the complexities of modern society and its physical environment. It may not be realistic to expect that future "demand" for the output of higher education -- especially at the advanced levels -- can be raised to the level projected in an ideal conception of national "need." But long-range planning should at least be oriented in that direction -- recognizing that continuous pragmatic adjustment will be necessary in order to find a feasible course somewhere between projections based upon the status quo (or worse) and planning guided by the long-term philosophic goals of a democratic society.

Finally, it should be observed that more important in long-range educational planning than numerical projections of enrollment -- which can be continuously and readily modified as relevant conditions warrant -- are the substantive tasks of adjusting institutional responsibilities, curricular content, and instructional resources to the changing demands of society. These will be the principal subjects for discussion in the following chapters.

III. OVERVIEW OF THE UNIVERSITY'S DEVELOPMENT PLAN

The development plan for the University of Illinois as a whole to 1980-81 will be presented in this chapter, with emphasis upon the main purposes and trends of the institution as a unified system. Later chapters will be devoted to plans for the individual campuses and for University-wide programs.

Three main topics will be considered in this Overview: (a) the general assumptions underlying the long-range plan, with special reference to the role of the University of Illinois in the State's system of higher education; (b) enrollment projections through 1980-81, including breakdowns by educational levels and broad areas of study; (c) program highlights, with emphasis upon major innovations and trends in instruction, research, and public service.

General Planning Assumptions

The assumptions to be outlined here relate mainly to broad policies and boundary conditions that have guided the formulation of the University's development plan -- including established policies of the Board of Higher Education.

1. That the University of Illinois now has a unique role in the State system of higher education and that this status should be reflected in Master Plan - Phase III. More specifically, it is assumed that the University will have priority in responsibility for the future expansion of advanced graduate and professional education among the public universities of Illinois, together with associated research and public service.

The development of Master Plan - Phase III by the Board of Higher Education has particular significance for the University of Illinois, which differs from all other institutions of higher education in the State in the scope and diversity of its responsibilities in the areas with which Phase III

will be concerned: graduate education and research in the fundamental branches of learning; teaching and research in the professional and technical fields that are heavily dependent upon advanced learning in the fundamental disciplines and highly important to the public welfare; the creative and performing arts; diversified programs of public service that bring continuing education and technical assistance of a high order to a state-wide clientele. The latter includes governmental agencies and other social institutions concerned with health, education, economic affairs, community welfare, and human relations.

Historically grounded in the "land-grant" tradition, with its original emphasis upon the democratization and individualization of educational opportunity, the University of Illinois has evolved during its first century into a genuinely comprehensive state university which is recognized as one of the nation's foremost centers of learning. The results of several evaluative surveys conducted since World War II have attested to the excellence of the University's graduate programs and to their high national standing. All of them have placed the University of Illinois within the top ten or twelve universities in the country in terms of the quality of its faculty and the excellence of its programs. The latest of these studies -- conducted by Allan M. Cartter for the American Council on Education -- evaluated graduate programs in five general areas of study.¹⁷ The "leading universities" in each area were then identified on the basis of having the highest average ratings within these divisions and having at least two departments rated as "Distinguished." The University of Illinois appeared in three of these five lists (biological sciences, physical sciences, engineering). Furthermore, its programs in the humanities and social sciences were judged generally to be "Strong."

¹⁷ Allan M. Cartter, An Assessment of Quality in Graduate Education. American Council on Education, 1966.

It is firmly believed that the best interests of the State will be served if the University not only is encouraged to maintain the high quality of its present programs but is granted priority in responsibility for whatever expansion of advanced graduate and professional education might be projected under Master Plan - Phase III. This does not mean that the University seeks a monopoly upon all programs at this level in all fields; but it is believed that in a period of some uncertainty as to how much expansion of these functions might be needed during the next two decades -- especially during the 1980's -- considerations of economy and the assurance of quality argue convincingly for concentration of them at the University of Illinois. A comprehensive university such as the University of Illinois provides the most economical and most effective institutional means whereby the State can be assured of maintaining the broad range of specialized faculties, facilities, and programs that will be required to keep it abreast of the rapidly changing technical and professional needs of modern society. This is true not only because of the disproportionate cost to the State of trying to duplicate such resources in other institutions -- without assurance that the expected quality and productivity would be forthcoming; but there is the further consideration that no other public institution could begin to match the University of Illinois in securing the outside support from federal and foundation sources that will be essential to supplement the State's contributions.

2. That the University's claim to priority among the public universities of Illinois in advanced graduate studies and research should be particularly recognized for programs involving multidisciplinary study and investigation.

The latter can be conducted at a satisfactory level of quality only by an institution with a wide range of scientific expertise, technical

specialists, and supporting technical resources. It is such considerations that led the National Science Board in a recent publication¹⁸ to make the following statement:

"Opportunities for public service may also require the development of graduate programs of a multidisciplinary character, variously involving the natural sciences, the social sciences including law, medicine, and engineering, as well as the arts and humanities. Here again, the quality of these contributions will determine the ultimate value of the product. A first-rate multidisciplinary program cannot be compounded from second-rate disciplinary efforts."

This advice is particularly pertinent at a time of widespread public concern over social and general environmental conditions that require multidisciplinary attention -- for purposes both of scientific understanding and of effective remediation. Under the pressures generated by such concern, public agencies and institutions may be strongly tempted to rush indiscriminately into hastily improvised multidisciplinary programs and makeshift "action" projects -- irrespective of the background of scholarly expertise and other technical resources needed to assure a high level of quality and effectiveness in such undertakings. Too many federal programs in recent years have encouraged this general pattern of well-intentioned but unproductive response to critical human needs and social problems. Aside from ineffectuality in achieving immediate objectives, such efforts generate a sense of frustration and resentment on the part of would-be beneficiaries -- as well as distrust on the part of the general public of rational-technical approaches to solving such problems.

¹⁸ National Science Board, Towards a Public Policy for Graduate Education in the Sciences. National Science Foundation, 1969 (p. 28).

The University recognizes the existence of a great diversity of human needs and social problems, with correspondingly varied requirements of expertise and other resources for relevant response by educational institutions. Hence, it does not assert a monopolistic claim to all types of instructional or public-service programs of problem-solving nature. Instead, it is urged that the University be given priority in responsibility for those instructional, research, and public-service programs of this type that require doctoral-level education (or the equivalent), together with highly technical multidisciplinary resources and a broad base of supporting disciplinary programs of high quality. Even with an unnecessary expenditure of State funds in the effort to duplicate such disciplinary resources in other State institutions, the probability of securing comparable quality is not high. Furthermore, as noted above, the University of Illinois is able to attract a far higher level of outside support for multidisciplinary programs than other state-supported universities.

3. That the Chicago Circle campus be expanded as rapidly as possible into a comprehensive urban university.

It is assumed that the nation's second-largest metropolitan area should have a public university of the first rank -- offering graduate, research, and public-service programs commensurate in scope and diversity with the varied needs of the area's people and with the magnitude of the problems of its physical environment.

An adequate university-level response to these needs will require substantial programs of high quality in all of the fundamental disciplines that must undergird the multidisciplinary programs which the Chicago Circle campus will conduct -- partly through the new College of Urban Sciences and partly through the other professional colleges.

An additional set of arguments for full-scale development of the University at Chicago Circle relates to the need to provide adequate educational opportunity to the able college graduates of the area who could not afford the high cost of private institutions (assuming the latter could admit them and meet costs not covered by tuition); nor, for the same general reason, would they be able to attend graduate or professional school elsewhere. The declining sources of support already in evidence for graduate students will hit such students particularly hard.

A strong testimonial to the uniqueness of the University's mission within the State system of higher education -- and especially to the University's position that the Chicago Circle campus should be brought into full-scale participation in that mission -- is found in the following excerpt from the Report of the Special Committee on New Institutions, which was submitted to the Board of Higher Education on December 20, 1967:

"The University of Illinois performs a wide variety of functions, but its unique and dominant mission appears to be the advancement of knowledge through research and education at the highest levels. Toward this end, it has assembled an illustrious staff of scholars and researchers, many of them among the foremost leaders in their disciplines. Through its excellent programs and its scholarly productivity, the University has brought academic luster to the State.

"Further, the University is expanding rapidly its brand of excellence. Chicago Circle is bending its full efforts toward development of advanced graduate and research programs. Even before it has granted a master's degree in any one of its thirteen recently approved master's degree programs, the Circle campus is pressing hard for approval of several doctoral programs. In the finest tradition of America's great universities and typical of the style developed at the parent campus in Urbana, Chicago Circle is recruiting top-flight scholars, amassing a first-rate library collection in its fields of interest, and constructing splendid laboratories and other facilities. Its dominant

thrust, clearly, is toward creating a scholarly environment conducive to research and the production of doctoral degrees.

"The University takes great pride, and rightfully so, in its development of high-quality educational programs. The very elements which create 'quality' in such an enterprise -- the outstanding professor, the collection of rare books, the complex equipment and elaborate facilities -- call for tremendous resources. The State should not, and indeed cannot, duplicate these programs elsewhere at this time."

4. That the University not propose the establishment of new campuses during the next decade, on the assumption that the enrollment projections for the State over the next twenty years do not justify such expansion.

Should the Board of Higher Education nevertheless decide that an additional campus will be established, the University would wish to consider submitting a proposal for its own involvement in the governance of such a new institution.

5. That the University's enrollment growth henceforth emphasize upper-division, graduate, and professional education -- with little increase beyond 1970 in lower-division enrollment.

This assumption reflects the policy already applied by the Board of Higher Education to the Urbana-Champaign campus. Although it has not yet been extended by that Board to the Chicago Circle campus, the latter's development plan includes only a slight increase in lower-division enrollment over the next decade.

Realizing the projected growth at upper-division level -- without corresponding increases in freshman enrollment -- obviously will depend primarily upon the transfer of students from junior colleges. The University has already taken substantial steps towards encouraging such transfers, and its program of articulation will be greatly expanded during the coming decade.

Enrollment Projections

Enrollment distributions by educational levels. The fall-term enrollment at all three campuses for 1969-70 was 51,926 students. This figure is predicted to rise by the fall of 1980-81 to a total of 77,700 students -- an increase of 25,774 or 49.6 per cent. By comparison, the corresponding increase projected for the State of Illinois is 61 per cent (from 409,552 to 659,025 students).

The projected increase of 49.6 per cent in eleven years represents a rate of growth only about half that for the preceding ten years from 1959 to 1969.¹⁹ In fact, the numerical increase of 25,422 for the latter period (from 26,504 in 1959 to 51,926 in 1969) was almost identical to that projected for the next eleven years (25,774). (The corresponding percentages are 95.9 and 49.6 per cent.) The composition of these two increments of growth, however, is quite different: some 76 per cent of the 1959-69 increase was at the undergraduate level; whereas only 44 per cent of that for 1969-80 would be undergraduate, most of it in upper-division students.

A detailed breakdown of the University's headcount enrollment by educational levels is shown in Table V (p. 38) -- the figures for 1969-70 referring to actual enrollments and those for 1971-72 and later years being projections. The following summary shows the gain at each level and in total, over the twelve-year period:

<u>Fall Term</u>	<u>Lower Division</u>	<u>Upper Division</u>	<u>Graduate I-Professional</u>	<u>Graduate II</u>	<u>Total</u>
1969	20,518	19,278	6,975	5,155	51,926
1980	22,200	29,100	15,240	11,160	77,700
Increase	1,682	9,822	8,265	6,005	25,774
Per cent	8.2%	50.9%	118%	116%	49.6%

¹⁹

The number used in calculating the average annual increase in enrollment over a period bounded by a beginning year and a terminal year is the number of years included in the period minus one. For example, the period from 1969-70 through 1980-81 covers twelve years; but there would be only eleven annual increments of increase above the figure for the base year.

TABLE V

ENROLLMENT DISTRIBUTION FOR THE UNIVERSITY OF ILLINOIS
BY LEVEL AND BY CAMPUS -- 1969-70 TO 1980-81^a

Term	Campus	Lower Division	Upper Division	Graduate I-Professional	Graduate II	Total
1969	Urbana-Champaign	11,883	11,548	4,724	4,604	32,759
	Medical Center	297	732	1,681	223	2,933
	Chicago Circle	8,338	6,998	570	328	16,234
	Total: Number	20,518	19,278	6,975	5,155	51,926
	Per cent	39.51%	37.13%	13.43%	9.93%	100.00%
1971	Urbana-Champaign	11,871	11,780	5,210	5,040	33,901
	Medical Center	425	904	1,891	294	3,514
	Chicago Circle	8,600	8,900	1,025	575	19,100
	Total: Number	20,896	21,584	8,126	5,909	56,515
	Per cent	36.97%	38.19%	14.38%	10.46%	100.00%
1972	Urbana-Champaign	11,884	11,912	5,468	5,281	34,545
	Medical Center	445	1,047	2,054	366	3,912
	Chicago Circle	8,700	9,700	1,375	825	20,600
	Total: Number	21,029	22,659	8,897	6,472	59,057
	Per cent	35.61%	38.37%	15.06%	10.96%	100.00%
1973	Urbana-Champaign	11,889	12,040	5,734	5,515	35,178
	Medical Center	510	1,192	2,239	432	4,373
	Chicago Circle	8,800	10,400	1,675	1,075	21,950
	Total: Number	21,199	23,632	9,648	7,022	61,501
	Per cent	34.47%	38.42%	15.69%	11.42%	100.00%
1974	Urbana-Champaign	11,900	12,169	5,994	5,745	35,808
	Medical Center	562	1,323	2,466	498	4,849
	Chicago Circle	8,900	11,100	1,950	1,350	23,300
	Total: Number	21,362	24,592	10,410	7,593	63,957
	Per cent	33.40%	38.45%	16.28%	11.87%	100.00%
1975	Urbana-Champaign	11,915	12,311	6,253	5,989	36,468
	Medical Center	581	1,467	2,737	588	5,373
	Chicago Circle	9,000	11,700	2,200	1,600	24,500
	Total: Number	21,496	25,478	11,190	8,177	66,341
	Per cent	32.40%	38.40%	16.87%	12.33%	100.00%
1980	Urbana-Champaign	12,000 ^b	13,000	7,600	7,200	39,800
	Medical Center	700	1,900	3,940	860	7,400
	Chicago Circle	9,500	14,200	3,700	3,100	30,500
	Total: Number	22,200	29,100	15,240	11,160	77,700
	Per cent	28.57%	37.45%	19.62%	14.36%	100.00%

Actual enrollment (headcount) for 1969-70; projections for 1971-72 and later years.

An enrollment of slightly over 12,000 is the present estimate for the Lower Division at the Urbana-Champaign campus in the fall term of 1970-71. This will be the upper limit for enrollment at that level, which is projected to be reached again in 1980.

These enrollment figures clearly show the direction and the relative magnitude of the shift in distribution over these four educational levels at the University between 1969 and 1980. There would be only a slight increase at Lower-Division level. For Upper-Division students, an increase of 50.9 per cent is projected, which would be substantially below the corresponding increase of 61 per cent for the State of Illinois. It is in graduate-professional enrollment that the University is projecting the greater part of its increase, with the rates of growth for the graduate-professional levels being approximately equal. The projected growth in total undergraduate enrollment to 1980-81 is 29 per cent, whereas the corresponding gain in graduate-professional enrollment would be 117 per cent.

These composite figures for the University as a whole obscure marked variations among the three campuses in the pattern of change in enrollment distribution over the twelve-year period. The individual patterns will be discussed in the later chapters on the campus plans, but the following facts might be noted here: (a) since the enrollment increase for the Medical Center campus falls heavily in the Graduate I-Professional category, it tends to overweight that category somewhat in comparison with the patterns for the other two campuses; (b) since the Chicago Circle campus had very few graduate students in 1969-70, its graduate percentage increases by 1980-81 at both graduate levels are very high.

Comparison of University and State of Illinois enrollment projections.

A detailed comparison of the University's enrollment figures with those for the State of Illinois is shown in Table VI on the following page. Beginning with the actual enrollments for 1969-70, the University and the State figures are compared for each of the four educational levels and for the annual total --

TABLE VI

COMPARISONS OF ENROLLMENT DISTRIBUTIONS BY LEVEL:
UNIVERSITY OF ILLINOIS (ALL CAMPUSES) AND STATE OF ILLINOIS^a

Year		Lower Division	Upper Division	Graduate I- Professional	Graduate II	Total
1969	U. of Illinois	20,518	19,278	6,975	5,155	51,926
	State of Illinois	240,998	109,978	47,504	11,072	409,552
	U. of I./Illinois	8.51%	17.53%	14.68%	46.56%	12.68%
1971	U. of Illinois	20,896	21,584	8,126	5,909	56,515
	State of Illinois	280,672	128,055	55,324	12,877	476,928
	U. of I./Illinois	7.44%	16.86%	14.69%	45.89%	11.85%
1972	U. of Illinois	21,029	22,659	8,897	6,472	59,057
	State of Illinois	296,736	135,385	58,490	13,614	504,225
	U. of I./Illinois	7.09%	16.74%	15.21%	47.54%	11.71%
1973	U. of Illinois	21,199	23,632	9,648	7,022	61,501
	State of Illinois	308,939	140,952	60,895	14,174	524,960
	U. of I./Illinois	6.86%	16.77%	15.84%	49.54%	11.72%
1974	U. of Illinois	21,362	24,592	10,410	7,593	63,957
	State of Illinois	320,886	146,402	63,250	14,722	545,260
	U. of I./Illinois	6.66%	16.80%	16.46%	51.58%	11.73%
1975	U. of Illinois	21,496	25,478	11,190	8,177	66,341
	State of Illinois	329,188	150,190	64,887	15,103	559,368
	U. of I./Illinois	6.53%	16.96%	17.25%	54.14%	11.86%
1980	U. of Illinois	22,200	29,100	15,240	11,160	77,700
	State of Illinois	387,836	176,948	76,447	17,794	659,025
	U. of I./ Illinois	5.72%	16.45%	19.94%	62.72%	11.79%

Actual enrollment (headcount) for 1969-70; projections for 1971-72 and later years.

and the University's percentage of the State total is shown in each case. The figures clearly indicate that the University's pattern of enrollment growth differs sharply from that for the State as a whole -- although the University's percentage of the State's total enrollment remains fairly constant over the twelve-year period (12.68 per cent in 1969-70 and 11.79 per cent in 1980-81).

At Lower-Division level, the University had 8.51 per cent of the State total in 1969-70, whereas by 1980 its share is projected to be only 5.72 per cent. In Upper-Division enrollment, the University's proportion of the State total shows a slight decrease over the twelve-year period (from 17.53 per cent in 1969-70 to 16.45 per cent in 1980-81). Graduate I-Professional enrollment would increase moderately over the twelve-year period -- from 14.68 per cent of the State total in 1969-70 to 19.94 per cent in 1980-81. At advanced-graduate level (Graduate II), however, the University projects a substantial increase in its percentage of the State's total enrollment: from 46.56 per cent in 1969-70 to 62.72 per cent in 1980-81.

The implications of the sharp increase in the University's proportion of the State's total enrollment at Graduate II level will become evident from an examination of the following figures taken from Table VI:

	<u>State Total</u>	<u>University of Illinois</u>	<u>Other Universities</u>
1969-70	11,072	5,155	5,917
1980-81	<u>17,794</u>	<u>11,160</u>	<u>6,634</u>
Increase	6,722	6,005	717
Per cent	60.71%	116.49%	12.12%

In effect, these figures mean that the University of Illinois' development plan proposes that the University accept most of the enrollment increase projected for the State at Graduate II level through 1980-81. This

proposal is consistent with the first two general planning assumptions stated above (pp. 30-34) to the effect that the University should have priority among the public universities of the State in advanced graduate education, especially that of multidisciplinary nature. It is assumed further that the private universities of Illinois are not planning to expand appreciably their enrollment at this level.

It should be emphasized that the precise numbers and percentages involved in the projections of the University's graduate and professional enrollments are not as important as the underlying policy assumptions. It is hoped that the Board of Higher Education, in its formulation of Master Plan - Phase III, will recognize the claim of the University of Illinois to priority in those areas of higher education in which it now enjoys virtually unique status among the State's public universities. The comparisons in the next section of the University's enrollment projections at graduate and professional levels with those of two other leading university systems show that the University is not planning to have an excessive proportion of students at these levels relative to its undergraduate enrollment.

Comparison with enrollment distributions of two other state-university systems. The University of California²⁰ and the State University of New York²¹ have issued enrollment projections by the four educational levels used in the foregoing tables, and these institutions are generally similar to the University of Illinois (in the case of SUNY, it is the four "University

²⁰University of California, Planned Growth of the University of California. An unpublished report supplied by the Office of the President of the University, February 1966.

²¹State University of New York, Development Document of 1968. Issued by the Board of Trustees of the State University of New York, 1968.

Centers" that are similar). Hence, it seemed desirable to compare their actual enrollment distributions and projections with those of the University of Illinois -- especially in terms of relative emphasis upon graduate-professional education. It was not possible to get figures for both institutions for all of the years being used in the present report, but such figures as were available are presented in Table VII (p. 44).

Generally speaking, both in terms of actual enrollments and in terms of projections, the University of Illinois shows substantially higher percentages at the two undergraduate levels than does the University of California system. Further, the University of California at Berkeley projects relatively fewer undergraduates than does the system as a whole, for all of the years for which data are included in Table VII.

The distribution pattern for SUNY was fairly close to that for the University of Illinois in 1967-68. But that system's projected enrollment pattern for its four University Centers in 1975-76 is almost identical to that for the University of California -- which means a substantially higher proportion of its students would be at graduate-professional levels that year than would be the case for the University of Illinois.

By 1980-81, the University of Illinois as a whole would have moved closer to the distribution pattern for the other two institutions, but still would have a higher percentage of undergraduates than either of them. Clearly, in terms of these comparisons, the University's development plan does not look towards an excessive proportion of graduate and professional students.

Distribution of graduate enrollment among broad fields of study.

Although the distribution of total enrollment by educational level is highly significant for long-range planning, it also seemed important to try to

TABLE VII

SELECTED PERCENTAGE DISTRIBUTIONS OF ENROLLMENT BY LEVELS
FOR THE UNIVERSITY OF ILLINOIS, UNIVERSITY OF CALIFORNIA,
AND STATE UNIVERSITY OF NEW YORK^a

	Lower Division	Upper Division	Graduate I- Professional	Graduate II	Total
<u>65</u>					
University of Illinois (System)	46%	27%	17%	10%	100%
University of California (Berkeley)	24%	38%	23%	15%	100%
University of California (System)	34%	34%	22%	10%	100%
<u>67</u>					
University of Illinois (System)	41%	33%	16%	10%	100%
University of California (Berkeley)	24%	35%	25%	16%	100%
University of California (System)	32%	36%	22%	10%	100%
NY (University Centers) ^b	40%	35%	19%	6%	100%
<u>69</u>					
University of Illinois (System)	40%	37%	13%	10%	100%
University of California (Berkeley)	23%	34%	27%	16%	100%
University of California (System)	30%	36%	24%	10%	100%
<u>75</u>					
University of Illinois (System)	33%	38%	17%	12%	100%
University of California (Berkeley)	20%	31%	30%	19%	100%
University of California (System)	24%	35%	28%	13%	100%
NY (University Centers) ^b	24%	36%	27%	13%	100%
<u>80</u>					
University of Illinois (System)	29%	37%	20%	14%	100%
University of Illinois (Urbana)	30%	33%	19%	18%	100%
University of Illinois (Medical Center)	9%	26%	53%	12%	100%
University of Illinois (Chicago Circle)	31%	47%	12%	10%	100%

The following percentages in this table are based upon actual enrollments: University of Illinois, through 1969-70; University of California, for 1965-66; State University of New York, for 1967-68. All other figures are projections.

The four "University Centers" of the State University of New York are located at Albany, Binghamton, Buffalo, and Stony Brook.

devise a systematic characterization of the University's development plan in terms of changes in the distribution of students among major areas of study. Is enrollment in engineering or in the humanities, for example, projected to decline, increase, or remain stable over a given planning period -- relative to other fields? The answers to such questions relate directly to critical issues of educational policy, and should provide some indication of possible mismatches between the output of graduates and the need for educated manpower.

The classification of the areas of study used in the present report is shown in Table VIII (p. 46). The eleven categories in the table differ from those used by the U. S. Office of Education in its annual survey of enrollment data, although the University's coding system for disciplines or curricula is such that its enrollment figures can be aggregated either into the USOE ("HEGIS") system or the one shown in Table VIII. Unfortunately, however, the Office of Education has not published breakdowns of its enrollment data in terms of the "HEGIS" categories, and has made no long-range projections by areas of study. Hence, it has not been possible to compare the changes from 1969-70 to 1980-81 shown in Table VIII for the University of Illinois with similar national or state-wide figures.

The data in Table VIII show for each of the two graduate levels the University's total enrollment for 1969-70 and for 1980-81 -- with breakdowns of each total by numbers and by percentages into eleven areas of study. The category names suggest fairly well the constituent disciplines or professions with two exceptions: "Applied social sciences and professions" and "Special interdisciplinary programs." The following are the fields included within each of these two groupings:

TABLE VIII

UNIVERSITY OF ILLINOIS: DISTRIBUTION OF GRADUATE AND
PROFESSIONAL ENROLLMENTS BY BROAD AREAS OF STUDY -- 1969-70 AND 1980-81

Educational Levels and Areas of Study	1969-70		1980-81	
	Number	Per Cent	Number	Per Cent
<u>Graduate I-Professional</u>				
Total Enrollment	6,975	100.00%	15,240	100.00%
I. Humanities and communications	775	11.11%	1,285	8.43%
II. Arts and environmental design	332	4.76%	817	5.36%
III. Biological sciences	199	2.85%	373	2.45%
IV. Agricultural sciences	129	1.85%	225	1.48%
V. Health professions	1,969	28.22%	4,780	31.36%
VI. Mathematical sciences	279	4.00%	640	4.20%
VII. Physical sciences	362	5.19%	580	3.81%
VIII. Engineering	433	6.21%	1,070	7.02%
IX. Social sciences	525	7.53%	1,219	8.00%
X. Applied social sciences and professions	1,761	25.25%	3,786	24.84% ^b
XI. Special interdisciplinary programs	211 ^a	3.03% ^a	465 ^b	3.05% ^b
<u>Graduate II</u>				
Total Enrollment	5,155	100.00%	11,160	100.00%
I. Humanities and communications	711	13.79%	1,250	11.20%
II. Arts and environmental design	178	3.45%	451	4.04%
III. Biological sciences	281	5.45%	701	6.28%
IV. Agricultural sciences	216	4.19%	350	3.14%
V. Health professions	250	4.85%	920	8.24%
VI. Mathematical sciences	331	6.42%	709	6.35%
VII. Physical sciences	571	11.08%	1,145	10.26%
VIII. Engineering	531	10.30%	1,704	15.27%
IX. Social sciences	688	13.35%	1,475	13.22%
X. Applied social sciences and professions	1,234	23.94%	2,170	19.45% ^b
XI. Special interdisciplinary programs	164 ^a	3.18% ^a	285 ^b	2.55% ^b

^a Irregular and unclassified students are counted in Area XI for 1969-70; but they are not projected for 1980-81.

^b Enrollment figures for 1980-81 in Area XI are projections for the new College of Urban Sciences (Chicago Circle campus).

Applied social sciences and professions. This category includes agricultural economics, commerce and business administration, education, home economics, law, physical education, and social work.

Special interdisciplinary programs. This category includes interdisciplinary curricula or administrative units covering more than one of the preceding ten categories (e.g., "urban sciences," "environmental sciences").

With three exceptions, the percentage distributions by area of study at Graduate I-Professional level seem fairly stable over the twelve-year period. The changes are as follows: substantial percentage declines for humanities and communications, and for physical sciences; a considerable increase for the health professions. The other fields show minor fluctuations in 1980-81 above or below the corresponding percentage values for 1969-70. It should be emphasized that all fields have enrollment increases projected for 1980-81 vs. 1969-70 -- as the enrollment numbers in the table show. The "declines" referred to are drops in percentage of the University total (i.e., relative declines as compared with the field's percentage for the earlier year).

At the Graduate II level, only the area of humanities and communications shows a fairly substantial drop in 1980-81 below its 1969-70 percentage-of-University total; whereas the health professions and engineering show rather marked increases (from 4.85 per cent in 1969-70 to 8.24 per cent in 1980-81 for the health professions; and from 10.30 per cent to 15.27 per cent for engineering). (The increase in engineering -- which will be discussed further in later chapters -- presupposes substantial involvement in multidisciplinary programs related to environmental and social problems.)

In interpreting these changes, in either direction, it should be reemphasized that all fields have projected gains from 1969-70 to 1980-81; an increase or decrease in percentage for 1980-81 shows only a field's

enrollment status relative to the other ten areas. In the case of "Applied social sciences and professions," for example, the Graduate II enrollment has a projected increase from 1,234 to 2,170 by 1980-81, but its percentage of the University total drops from 23.94 to 19.45 per cent. This is due mainly to the fact that the percentage increases for education and law are substantially lower than the average for all fields.

Comparisons similar to those shown in Table VIII will be made later for the individual campuses, and it will be somewhat easier to identify and interpret changes in relative emphasis at campus level than to do so with the composite figures shown in Table VIII for the University as a whole. In particular, the removal of the figures for the health professions, which include all data for the Medical Center campus, will permit the distinctive patterns for the Chicago Circle and the Urbana-Champaign campuses to emerge more clearly.

If one can generalize very broadly from the main trends shown in Table VIII, it may be stated that there is a relative enrollment shift from both the humanities and the physical sciences to the health professions and engineering. The other areas tend to maintain their relative positions, with minor fluctuations, over the twelve-year period. It is perhaps surprising that the applied social sciences and professions as a group show a lower-than-average rate of increase over the twelve-year period. But, to repeat, the trends for the individual fields within that broad category are conflicting, and these variations will be discussed further in the chapters on the Chicago Circle and Urbana-Champaign campuses.

Highlights of the University's Development Plan

The statistical patterning of enrollment distributions -- among campuses, educational levels, and areas of study -- can indicate the general scope and directions of development embodied in an educational plan; but such numerical characterization cannot reflect very adequately a university's significant changes in organizational structure, in curricular objectives and innovation, in research orientation, and in the purposes and strategies of public-service activities. Although a full account of these substantive aspects of the University's future programs will be reserved for later chapters, the present section will include brief discussions of selected major areas that will have special emphasis as the development plan unfolds during the coming decade.

The health fields. Partly because planning in these fields began several years ago, but also because of society's acute needs, the programs in the health sciences and professions stand virtually at the top of the University's list of priorities for expansion and improvement during the years immediately ahead. Although concentrated at the Medical Center campus, the other two campuses will also be heavily involved; and regional centers will be established in Peoria, Rockford, and perhaps other areas of the State.

The main objectives of these programs are as follows:

1. Increase in the supply of professional manpower, and at the same time expanded opportunities for Illinois youth to enter the health professions. Massive growth in enrollment is planned for the Medical Center campus and its proposed branches -- approximately 150 per cent by 1980.

A School of Basic Medical Sciences is being established at the Urbana-Champaign campus, to be followed as soon as possible by a school offering clinical training to complete the work required for the M.D. degree.

At the Chicago Circle campus, graduate instruction in the behavioral and social sciences will provide the necessary interdisciplinary components of instruction for graduate degrees in public health and research support for studies of the delivery of health services. A school of basic medical sciences is also under discussion.

2. Curricular revision designed to improve professional education and, especially, to shorten the overall period of training for physicians.
3. The creation of conditions of professional education and practice designed to increase the number of practitioners who remain in Illinois after completing their training. The regional centers mentioned above and the establishment of a state-wide network for continuing education of practitioners will contribute towards this objective.
4. Improved utilization of professional manpower and other resources involved in the delivery of health care. A proposed Center for the Study of Patient Care and Community Health -- part of a new graduate School of Public Health -- will be the primary agency for the achievement of this broad purpose. It is expected that all three campuses will participate in this extensive program, which will give attention particularly to the behavioral-social and administrative sciences concerned with the evaluation of the effectiveness of health-care services.
5. Innovation in education for the delivery of health services in urban centers, including new modes of providing health care to inner-city families.

Urban studies. The complex of individual and social needs arising

within the modern urban environment has led at the Chicago Circle campus to the establishment of a College of Urban Sciences, which will become the University's primary focus for interdisciplinary instruction, research, and public service related to the critical problems of urban society. Opportunities will be available to interested faculty members from the other two campuses to participate in all three aspects of the College's program. Furthermore, other colleges and departments at the Chicago Circle campus will provide strong support for the College's innovative instructional activities; and,

through joint appointments, they will participate in its various task forces to be organized for multidisciplinary research and related public service.

Both undergraduate and graduate instruction will be offered; and, at both levels, course work and research training will involve direct interaction with local communities and institutions.

In graduate study, the College of Urban Sciences will concentrate upon professional training, including a professional doctorate. The College will become one of the principal instrumentalities through which the University will cultivate greatly expanded programs of graduate education for a variety of "public-service professions." Public administration and urban planning are examples. In addition, the new College will develop professional specialties involving applications of various social sciences to selected classes of urban problems (such as housing, race relations, health and nutrition, employment, recreation, crime and delinquency, the maintenance of environmental quality, and economic development).

The other professional colleges at the Chicago Circle campus -- Architecture and Art, Business Administration, Education, and Engineering -- will also conduct instructional and research programs with a strong urban emphasis.

Environmental sciences. The principal new development at the Urbana-Champaign campus is a proposed "Environmental Studies Institute," which would bring into cooperative interaction a wide range of departments in the biological sciences, engineering, agricultural sciences, environmental design fields, and the relevant social sciences.

The Institute would be an autonomous organizational unit whose Director would report to the Vice Chancellor for Academic Affairs. Although

it would rely on other departments for cooperation in the form of joint appointments and other support, the Institute would have its "core" faculty and would be responsible for organizing and administering interdisciplinary courses and research programs.

With the establishment of a program in medical education at the Urbana-Champaign campus, and with the varied activities in the Colleges of Agriculture, Engineering, and Veterinary Medicine concerned with health problems, the Environmental Studies Institute will add substantially to the campus resources for instruction and research in environmental health.

Improving the cultivation and the utilization of human resources.

The long-range plans of all three campuses emphasize a variety of programs designed to improve the quality of education and to increase the effectiveness of society's utilization of its human resources through productive employment. Particular interest at the Chicago Circle and the Urbana-Champaign campuses, for example, will be focused upon educationally and economically "disadvantaged" individuals -- with the broad purpose of raising their level of educational achievement, increasing their effectiveness as members of social groups, and helping to facilitate their assimilation into productive jobs.

As already noted, the Medical Center campus is experimenting with new modes of delivery of health care in inner-city communities. These activities will be expanded in conjunction with the new School of Public Health and its Center for the Study of Patient Care and Community Health.

The Institute of Labor and Industrial Relations, the Jane Addams Graduate School of Social Work, the Institute of Government and Public Affairs, and several departments are planning multidisciplinary studies of the delivery of public services in such areas as social welfare, health, and employment.

It is hoped that these studies can be related to the program of the newly established Illinois Institute for Social Policy (an agency of State government).

With respect to educational innovation, the program of the Computer-Based Education Research Laboratory at the Urbana-Champaign campus will be particularly significant. With its PIATO IV system²² -- which has been ten years in development and testing -- this Laboratory provides a means whereby substantial gains in educational skills and in vocational competence can be achieved for educationally disadvantaged students. In cooperation with the Curriculum Laboratory of the College of Education at the Urbana-Champaign campus, the Computer-Based Education Research Laboratory has already used the PIATO system in instruction with such groups, and other cooperative endeavors are being planned.

Undergraduate education. Improvement in the quality of undergraduate education -- especially at freshman-sophomore level -- will have very high priority among the University's goals for the 1970's. With the stabilization of lower-division enrollment and the reduction in rate of growth in the upper-division student body, more intensive effort can be devoted to this task than has been possible during the twenty-five years since World War II.

Several sets of circumstances during that period have created enormous pressures upon the limited resources available to public universities, with the result that they have been unable to give as much attention to undergraduate education as the importance of this central aspect of their mission clearly deserves. The following among these conditions have been especially

²² The acronym "PIATO" refers to "Programmed Logic for Automatic Teaching Operations." The program originated in the Coordinated Science Laboratory of the College of Engineering, but the Computer-Based Education Research Laboratory is now located in the Graduate College.

important: (a) the extraordinary enrollment increase due to veterans returning from World War II, which lasted well into the 1950's for those seeking doctoral degrees; (b) the unprecedented demands upon universities for graduate education, research, and development related to the nation's needs in the fields of health, defense, atomic energy, space, education, and various other areas; (c) the massive growth of enrollment in the 1960's, reflecting the sharp upturn in the birthrate after World War II as well as a markedly greater proportion of the college-age population seeking higher education; (d) the rising expectation that universities should utilize their technical and professional expertise for the benefit of a multitude of "publics" in search of solutions to increasingly complex problems.

Universities and their faculties have been diversely criticized for the overall outcome of their multiple responses to these competing needs during the last quarter of a century. And from the individual perspectives of any one of the interests represented in the foregoing list, it is relatively easy to identify deficiencies in what has been accomplished. Perhaps the most prominent of the complaints has been that faculty members have engaged in a mass "flight from teaching," as a willful and welcomed escape from their responsibilities for undergraduate education -- with the acquiescence, if not outright encouragement, of their universities.

While this is not the place for a full discussion of this controversial subject, a few observations would seem to be in order. First, it certainly is true that since World War II large numbers of faculty members -- in total a far higher proportion than ever before in higher education -- have spent most of their time in graduate education and research, and have done little or no

undergraduate teaching. Second, no definitive body of evidence has been assembled concerning the motivation underlying the professional commitments of this segment of university faculties (e.g., as to what proportion of these individuals unreservedly preferred their noninvolvement in undergraduate teaching, in contrast to those who found this to be a hard but seemingly inescapable choice under the circumstances). Third, an acute shortage of faculty-calibre manpower has existed during that period -- in large part due to the fact that the enormous and unprecedented postwar burden of teaching, research, and public service has had to be carried somehow by a disproportionately small professional population derived from earlier periods of very low birthrates.

Irrespective of the justification for the priority judgments concerning the use of available professorial manpower, probably very few university educators would deny that the quality of undergraduate education in large universities has been in certain respects less than satisfactory since World War II. There has been too great reliance, for example, upon graduate assistants as teachers in freshman-sophomore courses. Too many classes have been too large -- even though some of the most effective instruction has sometimes occurred in large lecture courses taught by outstanding teachers. Departmental and other administrative officers, as well as faculty leaders, have too often failed to give sufficient encouragement and recognition to teaching as a professional career and as a basic educational function. Undergraduate curricula have too frequently mirrored the pattern of disciplinary graduate specialization, rather than being uniquely designed to meet the educational needs of undergraduates. A related shortcoming has been the failure of graduate schools and departments

to train enough of their doctoral students in the kinds of scholarship and special skills required for effective teaching.

These shortcomings have been mitigated to a considerable degree at the University of Illinois by the establishment of a variety of special programs: the James Scholar program, with its special honors seminars and sections of regular courses; a program of "Undergraduate Instructional Awards," consisting of grants to selected faculty members for summer projects designed to improve undergraduate teaching; offices of instructional resources at all three campuses which provide professional services and teaching aids to departments and individual faculty members seeking to evaluate and improve instruction; formal programs for training teaching assistants and supervising their work; special departmental appointments and provision of associated facilities for the improvement of instruction in basic undergraduate courses.

Although these steps have generally yielded highly beneficial results, they have not been adequate, either in kind or in scope, to the magnitude of the educational task. Furthermore, they have not been uniformly effective in all areas of instruction. A more systematic, more pervasive, and more massive attack upon all of the major types of shortcomings identified above -- and that list is not an exhaustive one -- needs to be undertaken. This will be one of the University's foremost tasks for the 1970's -- a responsibility whose importance is measured partly by the fact that at the end of the present planning period (1980-81), undergraduate enrollment at all three campuses is projected to be 51,300 students -- or about two-thirds of the total of 77,700. (This would be an increase of 11,504 above the figure of 39,796 undergraduates in the fall term of 1969-70.) Most of them will be located at the Chicago Circle and the Urbana-Champaign campuses (see Table V on p. 38).

In order to reinforce the efforts of the individual undergraduate colleges, a senior academic officer under the Chancellor will be appointed at each of these two campuses, with responsibility for planning, coordinating, and evaluating programs directed towards the improvement of undergraduate instruction. His functions would be parallel in certain respects to those of the Dean of the Graduate College for graduate education. (It is assumed that no separate office for this purpose need be created at the Medical Center campus, since all undergraduates there are in specialized professional programs.)

At general University level, a senior academic officer will be appointed under the Executive Vice President and Provost with University-wide responsibilities for planning, coordinating, and evaluating programs related to undergraduate education. As an advisory body to that officer, and under his chairmanship, a University Council on Undergraduate Education will be established. The membership would include the chief campus officers just mentioned, as well as representative faculty members and students. The first task of this Council would be to develop program proposals and operational guidelines for consideration by the newly established offices concerned with undergraduate education.

As already indicated, the focus of these activities would be upon plans and programs for the improvement of undergraduate education, in which continuing evaluation would play a major role. These special administrative offices would not supersede or encroach upon the prerogatives of existing faculty bodies or other administrative offices.

Changing emphases in graduate-professional education. In conjunction with the improvement of undergraduate education, and in line with the growing

national interest in a new type of "teaching doctorate," both the Urbana-Champaign and the Chicago Circle campuses plan to enroll a substantial number of their future graduate students, in a variety of disciplines, in new curricula leading to the degree of Doctor of Arts. This type of program will not involve the intensive type of research training, including "original" investigation, that is required for the Ph.D. degree; but it will have equivalent scholarly requirements and standards. Instead of the research dissertation, practical experience will be provided in laboratory-type instruction concerned with curriculum development and teaching techniques. This aspect of the program will be essentially a "professional" component designed specifically to improve the teaching skills of the trainee in his academic subject. The remainder of the curriculum will be similar to that followed for the Ph.D. degree, although variations will be allowed more freely in the Doctor of Arts program to permit the inclusion of courses in other departments and interdisciplinary courses.

Although the Doctor of Arts degree will provide an appropriate background for all levels of undergraduate education, it will be particularly good preparation for teaching in junior colleges. The curricula for this degree will be developed in consultation with junior-college faculty members and administrators.

In the earlier discussions of the health fields and urban studies, the need for more professionals with a different form of advanced education than the Ph.D. degree has been emphasized. At all three campuses, the University will expand existing programs and develop new ones designed to meet the need for high-level administrators and technical personnel with applied-research capabilities. New professional doctorates in such fields as public health,

social work, public administration, urban planning, and engineering are examples of these programs. They will have a strong multidisciplinary orientation that will include varied experience in concrete institutional settings (internships, participation in evaluation studies, applied-research projects, etc.). Such training should inculcate into the graduates the kinds of interests and skills that are needed for more effective attack upon the complex problems of modern society.

In planning an increase in emphasis upon advanced professional-technical training, it should be stressed that this need not be done through weakening the University's strong commitment to graduate education leading to the Ph.D. degree and the basic research associated with it. Indeed, it will be necessary to strengthen and expand both of these disciplinary functions in many fields -- especially at the Chicago Circle campus -- in order to provide a sound scholarly foundation for the interdisciplinary and multidisciplinary activities involved in professional education, applied research, and high-level public service.²³

Other developments. In the following chapters on the plans for the three campuses and for general University programs, additional developments of great importance to the University and the State will be discussed. These will include the establishment of new schools, departments, degree curricula, and research centers. And they will also stress important shifts of emphasis within existing colleges and departments. For example, the Colleges of Engineering at both the Chicago Circle and the Urbana-Champaign campuses are planning a major reorientation of their programs towards greater emphasis upon

²³ The need to have a strong disciplinary foundation for multidisciplinary programs was stated above (pp. 32-34) as the second of the University's "General Planning Assumptions," with a supporting quotation from a publication of the National Science Board (see footnote 18, p. 33, for the reference).

interdisciplinary studies related to the quality of the physical environment and upon those aspects of social problems that are amenable to engineering study in cooperation with social scientists.

Finally, a major reorganization of the University's extension and public-service activities will be carried out -- involving new administrative arrangements and programs at each of the three campuses, and the appointment of a general University officer with responsibility for system-wide planning and coordination of these functions. This and other University-wide developments will be discussed in the last chapter.

IV. THE URBANA-CHAMPAIGN CAMPUS

Having recently completed its first century of growth, the University's Urbana-Champaign campus has reached substantial maturity in its instructional and research programs. This does not mean that a full complement of courses or degree programs is offered in all disciplines, professions, and technical fields, since many omissions could be cited in all of these categories. But except for the health sciences and professions, the Urbana-Champaign campus has reached a developmental stage approximately comparable to that achieved by other institutions of its type and age.

Eighty (80) curricula are offered leading to doctoral degrees: 70 for the Ph.D. degree and 10 for doctorates in professional fields. The complete list is presented in Table IX on the following page. For the year 1969-70, some 778 doctoral degrees were awarded at the Urbana-Champaign campus -- 706 Ph.D. degrees and 72 professional doctorates. Although no comparable figures are available yet for this period from other universities, earlier comparisons place the University of Illinois near the top of all other institutions in the country in the production of doctorates. For example, the Urbana-Champaign campus stood fourth among all graduate institutions in the country in the number of doctorates awarded in 1967-68 (the latest year for which comparable figures are available). According to a report by the National Academy of Sciences, over the six-year period 1958-66 the University of Illinois (the Urbana-Champaign and the Medical Center campuses) stood first among all graduate institutions in the number of doctorates awarded. (Most of the University's degrees were awarded by the Urbana-Champaign campus during that period.)

The comparative quality of the graduate and research programs at the Urbana-Champaign campus is indicated by the results of the study conducted for

TABLE IX

DOCTORAL DEGREE PROGRAMS OFFERED BY THE UNIVERSITY OF ILLINOIS
AT THE URBANA-CHAMPAIGN CAMPUS

Ph.D. Degrees (70)

Accountancy
Aeronautical and Astronautical
Engineering
Agricultural Economics
Agricultural Engineering
Agronomy
Animal Science
Anthropology
Art, History of
Astronomy
Biology
Biophysics
Botany
Business
Ceramic Engineering
Ceramics
Chemical Engineering
Chemical Physics
Chemistry
Civil Engineering
Classical Philology
Communications
Comparative Literature
Computer Science
Dairy Science
Dairy Technology
Economics
Education
Electrical Engineering
English
Entomology
Finance
Food Science
French
Genetics
Geography
Geology
German
History
Home Economics
Horticulture
Italian
Labor and Industrial Relations

Ph.D. Degrees (Continued)

Library Science
Linguistics
Marketing
Mathematics
Mechanical Engineering
Microbiology
Mining Engineering
Metallurgical Engineering
Musicology
Nuclear Engineering
Nutritional Sciences
Philosophy
Physical Education
Physics
Physiology
Plant Pathology
Political Science
Portuguese
Psychology
Russian
Sanitary Engineering
Sociology
Spanish
Speech
Statistics
Theoretical and Applied
Mechanics
Veterinary Medical Science
Zoology

Professional Doctorates (10)

Doctor of Art Education
Doctor of Business Administration
Doctor of Education in Education
Doctor of Library Science
Doctor of Musical Arts
Doctor of Music Education
Doctor of Psychology
Doctor of the Science of Law
Doctor of Veterinary Medicine
Juris Doctor

the American Council on Education by Allan M. Cartter.²⁴ As already noted (p. 31), the University of Illinois was placed among the top universities in the nation on the basis of ratings of its doctoral programs and graduate faculty; and its standing was based almost entirely on the evaluations of graduate work offered at the Urbana-Champaign campus. (The Chicago Circle campus had no graduate programs at the time of the Cartter study, and very few of the fields surveyed are offered at the Medical Center campus.) It should be emphasized, furthermore, that the national distinction of the University of Illinois at Urbana-Champaign has long been recognized. In an evaluation study conducted in 1924 by Raymond Hughes -- and reported at the 1925 annual meeting of the Association of American Colleges -- the University of Illinois was ranked eleventh among American universities in quality of graduate education.

Additional evidence of the depth and variety of interests in graduate education, research, and development at the Urbana-Champaign campus is provided in the selected list of its special centers, institutes, laboratories, and other research agencies presented in Table X (p. 64). These units are quite diverse in organizational status, function, and level of effort. Several of them are essentially coordinating agencies -- without direct responsibility for conducting programs but playing an important role in interdisciplinary planning and in securing support for their cooperating groups from within and outside the University. Others are departmental research laboratories, with continuing programs of substantial magnitude in specialized areas. A few are large-scale interdisciplinary or multidisciplinary centers which provide research support for large numbers of faculty members, graduate students, and postdoctoral trainees.

²⁴ Allan M. Cartter, An Assessment of Quality in Graduate Education. American Council on Education, 1966.

TABLE X

SELECTED LIST OF CENTERS, LABORATORIES, AND OTHER UNITS
CONCERNED WITH RESEARCH AT THE URBANA-CHAMPAIGN CAMPUS

Graduate College

Atmospheric Research Laboratory
Center for Advanced Computation
(pending)

Center for Advanced Study
Center for Human Ecology
Children's Research Center
Computer-Based Education
Research Laboratory
Illinois Historical Survey

College of Agriculture

Burnsides Research Laboratory
Crop Evolution Laboratory
Dixon Springs Agricultural
Center
Reproductive Physiology and
Endocrinology Laboratory

College of Commerce and
Business Administration

Bureau of Economic and
Business Research

College of Communications

Institute of Communications
Research

College of Education

Bureau of Educational Research
Curriculum Laboratory
Institute for Research on
Exceptional Children

College of Engineering

Aeronomy Laboratory
Coordinated Science Laboratory
Gaseous Electronics Laboratory
Materials Research Laboratory
Nuclear Reactor Laboratory
Physics Research Laboratory (Betatron)
Soil Mechanics and Foundations
Laboratory

VII. College of Fine and Applied Arts

Small Homes Council-Building
Research Council

VIII. College of Liberal Arts and Sciences

Center for Asian Studies
Center for Comparative
Psycholinguistics
Center for Human Ecology
Center for Latin-American Studies
Center for Russian and East
European Studies
Personality and Group Analysis
Laboratory
Speech and Hearing Clinic
Vermilion River Observatory

IX. College of Veterinary Medicine

Center for Zoonoses Research and
Comparative Medicine

X. Institute of Aviation

Aviation Research Laboratory

XI. Office of International Programs

Center for International
Comparative Studies
Center for International Education
and Research in Accounting

XII. Graduate School of Library Science

Library Research Center

XIII. University-wide Units

Institute of Government and
Public Affairs
Institute of Labor and Industrial
Relations
Survey Research Laboratory

The graduate departments at the Urbana-Champaign campus and the specialized research units listed in Table X account for most of the University's high level of federal support for research and graduate education. In terms of federal funds provided for academic science in fiscal year 1967, for example, the University of Illinois ranked third among universities in the nation -- its total of \$52,446,000 being exceeded only by the grants to the Massachusetts Institute of Technology and to the University of Michigan.

Despite the recent decline in federal funds in certain fields, the University's overall level of support remains high -- as does its comparative standing by this measure among other universities. The Urbana-Champaign campus expects federal grants at a relatively high level to continue for its programs of graduate instruction and research during the 1970's. This campus should thus be able to maintain its status as the most productive institutional channel through which the State receives federal support for its programs of advanced graduate and professional education, research, and research-related public service.

The educational programs of the Urbana-Champaign campus at all levels will undergo marked changes during the next ten years -- in response to new conditions and to the needs generated by them. In the spirit of the University's hundred years as a land-grant institution, the development plan for this campus calls for full utilization of its wealth of resources towards finding better ways to meet human needs and to help society solve its critical problems. These efforts will involve the search for new fundamental knowledge in difficult fields of inquiry, problem-centered research and development, and unique modes of public service that only a comprehensive university of high quality can provide.

Enrollment Growth

The headcount enrollment for the fall term of 1969-70 at the Urbana-Champaign campus was 32,759 students. The questions of how much to increase enrollment beyond that figure by 1980-81, and how such increases should be distributed by levels and fields of study, were among the central issues facing the campus special committee on long-range planning. Surveys of the attitudes of departments, colleges, and other units as to the overall optimal size of the campus indicated a desire to hold enrollment to a level somewhere between 35,000 and 40,000 students. But the summation of the individual departmental and college requests yielded a total of almost 49,000 students! After lengthy discussions and adjustments designed to reconcile these incompatible "projections," the committee settled provisionally upon 39,200 students as a target figure for 1980-81. This was subsequently increased to 39,800, which is the number shown in Table XI on the following page. Of this total, 25,000 would be undergraduate and 14,800 would be graduate and professional students.

For comparative purposes, the following were the enrollments at the main campuses of the public institutions among the "Big Ten" universities in the fall of 1969:

Indiana University (Bloomington)	29,309
University of Illinois (Urbana-Champaign)	32,759
University of Iowa (Iowa City)	20,236
University of Michigan (Ann Arbor)	32,003
Michigan State University (East Lansing)	40,820
University of Minnesota (Minneapolis-St. Paul)	42,996
Ohio State University (Columbus)	45,009
Purdue University (Lafayette)	25,037
University of Wisconsin (Madison)	35,549

TABLE XI

ENROLLMENT DISTRIBUTION FOR THE URBANA-CHAMPAIGN CAMPUS
BY LEVEL -- 1969-70 TO 1980-81^a

Fall Term	Lower Division	Upper Division	Graduate I-Professional	Graduate II	Total
<u>1969</u>					
Number	11,883	11,548	4,724	4,604	32,759
Per cent	36.27%	35.25%	14.42%	14.06%	100.00%
<u>1971</u>					
Number	11,871	11,780	5,210	5,040	33,901
Per cent	35.02%	34.75%	15.37%	14.86%	100.00%
<u>1972</u>					
Number	11,884	11,912	5,468	5,281	34,545
Per cent	34.40%	34.48%	15.83%	15.29%	100.00%
<u>1973</u>					
Number	11,889	12,040	5,734	5,515	35,178
Per cent	33.80%	34.22%	16.30%	15.68%	100.00%
<u>1974</u>					
Number	11,900	12,169	5,994	5,745	35,808
Per cent	33.23%	33.99%	16.74%	16.04%	100.00%
<u>1975</u>					
Number	11,915	12,311	6,253	5,989	36,468
Per cent	32.67%	33.76%	17.15%	16.42%	100.00%
<u>1980</u>					
Number	12,000 ^b	13,000	7,600	7,200	39,800
Per cent	30.15%	32.66%	19.10%	18.09%	100.00%

^aActual enrollment (headcount) for 1969-70; projections for 1971-72 and later years.

^bAn enrollment of slightly over 12,000 is the present estimate for the Lower Division at the Urbana-Champaign campus in the fall term of 1970-71, which will be the upper limit for enrollment at that level.

Distribution of enrollment by educational level. Most of the increase of 7,041 students from 1969-70 to 1980-81 would be at the graduate-professional level (5,472 graduate-professional, 1,569 undergraduate). The figures in Table XI show a gradual change in the percentage distribution over the twelve-year period from undergraduate to graduate levels. In 1980-81, approximately 37 per cent of the enrollment would be at the two graduate levels, while for 1969-70 the figure was 28.48 per cent. It should be noted that the graduate-professional projections for 1980-81 are lower percentagewise than those shown earlier in Table VII for the University of California in 1975 (for the Berkeley campus, 49 per cent graduate; University of California system, 40 per cent graduate).

As regards the rate of growth over the twelve-year period (1969-70 to 1980-81), the average increase per year is approximately 640 students, while that for the ten-year period from 1971-72 through 1980-81 is 655 students. This annual increment may be compared with the average annual increase of 1,200 students for the ten years between 1960-61 and 1969-70.

The following figures summarize the comparative increases in numbers and in percentages of enrollments for the two ten-year periods:²⁵

	<u>Undergraduate (Both Levels)</u>	<u>Graduate I, II- Professional</u>	<u>Total</u>
1960-61	17,003	4,952	21,955
1969-70	<u>23,431</u>	<u>9,328</u>	<u>32,759</u>
Increase: Number	6,428	4,376	10,804
Per cent	37.80%	88.36%	49.20%
Per year ²⁵	714	486	1,200
1971-72	23,651	10,250	33,901
1980-81	<u>25,000</u>	<u>14,800</u>	<u>39,800</u>
Increase: Number	1,349	4,550	5,899
Per cent	5.73%	44.38%	17.40%
Per year ²⁵	150	505	655

²⁵ There are nine increments of increase within each of the ten-year periods involved in these comparisons.

Distribution of graduate-professional enrollment by broad areas of

study. Parallel to the analysis for the University as a whole presented earlier, the percentage distributions of postbaccalaureate enrollment among the eleven broad areas of study are presented in Table XII (p. 70), for the years 1969-70 and 1980-81. Enrollment increases are shown over this period for all areas, and at both educational levels; but the rates of growth vary substantially among the eleven areas, with resulting "gains" and "losses" in the proportionate share of the campus total. These trends serve, therefore, as rough indicators of changing emphasis among the areas. Such interpretations should be made cautiously, however -- as the earlier discussion of University-wide patterns has suggested.

Comparing the distribution pattern at the Graduate I-Professional level for 1969-70 with that for 1980-81, the greatest relative gains are shown for the health professions (from 6.10 to 11.05 per cent) and for the applied social sciences and professions (34.53 to 37.36 per cent). The fields showing a drop in relative emphasis over the planning period are, in decreasing order of magnitude: humanities and communications (14.39 to 11.45 per cent), and physical sciences (6.58 to 4.80 per cent). Moderate declines in relative standing are shown for biological sciences and social sciences, while slight gains are shown for arts and environmental design, agricultural sciences, mathematical sciences, and engineering.

The category "applied social sciences and professions" includes four professional fields that are of particular importance to the campus and to state-wide planning: commerce and business administration, education, law, and social work. A breakdown of the enrollments in these fields for 1969-70

TABLE XII

URBANA-CHAMPAIGN CAMPUS: DISTRIBUTION OF GRADUATE AND PROFESSIONAL ENROLLMENTS BY BROAD AREAS OF STUDY -- 1969-70 AND 1980-81

Educational Levels and Areas of Study	1969-70		1980-81	
	Number	Per Cent	Number	Per Cent
<u>Graduate I-Professional</u>				
Total Enrollment	<u>4,724</u>	<u>100.00%</u>	<u>7,600</u>	<u>100.00%</u>
I. Humanities and communications	680	14.39%	870	11.45%
II. Arts and environmental design	332	7.03%	550	7.24%
III. Biological sciences	150	3.18%	230	3.03%
IV. Agricultural sciences	129	2.73%	225	2.96%
V. Health professions	288	6.10%	840	11.05%
VI. Mathematical sciences	226	4.78%	415	5.46%
VII. Physical sciences	311	6.58%	365	4.80%
VIII. Engineering	378	8.00%	670	8.82%
IX. Social sciences	388	8.21%	595	7.83%
X. Applied social sciences and professions	1,631	34.53%	2,840	37.36%
XI. Special interdisciplinary programs	211 ^a	4.47% ^a	(225) ^b	(2.96%) ^b
<u>Graduate II</u>				
Total Enrollment	<u>4,604</u>	<u>100.00%</u>	<u>7,200</u>	<u>100.00%</u>
I. Humanities and communications	686	14.90%	985	13.68%
II. Arts and environmental design	178	3.87%	310	4.31%
III. Biological sciences	259	5.63%	470	6.53%
IV. Agricultural sciences	216	4.69%	350	4.86%
V. Health professions	27	.59%	60	.83%
VI. Mathematical sciences	285	6.19%	500	6.94%
VII. Physical sciences	514	11.16%	800	11.11%
VIII. Engineering	502	10.90%	1,220	16.94%
IX. Social sciences	630	13.68%	935	12.99%
X. Applied social sciences and professions	1,143	24.83%	1,570	21.81%
XI. Special interdisciplinary programs	164 ^a	3.56% ^a	(400) ^b	(5.56%) ^b

^aThe 1969-70 students classified in Area XI are graduate students who are not candidates for degrees. No enrollments of such students are projected for 1980-81.

^bThis number refers to projected enrollments in multidisciplinary programs to be administered by a proposed Environmental Studies Institute, whose students will be classified among the cooperating departments and colleges of several of the broad areas listed in this table.

and the projections for 1980-81 is of special interest. The following figures show the enrollments for these two years and the percentage increases from 1969-70 to 1980-81:

Graduate I-Professional	1969	1980	Increase	
			No.	%
Commerce and business administration	194	475	281	145%
Education	514	855	341	66%
Law	618	1,015	397	64%
Social work	75	175	100	133%

In all cases, the percentage increases exceed those for the total enrollment at Graduate I-Professional level (which is 61 per cent). The projected increases for commerce and business administration and for social work are substantially higher than those for the other two fields in this professional group.

The distribution pattern for Graduate II enrollment is generally quite different from that for the Graduate I-Professional level -- as inspection of the figures in Table XII will show. This is due partly to the fact that most of the enrollment in the postbaccalaureate professional curricula is classified as "Graduate I-Professional" (e.g., that in law, medicine, and veterinary medicine). (The enrollment at Graduate II level for these fields consists of students working towards various types of graduate degrees -- mainly doctoral and master's degrees requiring longer than one academic year.)

In general, the greatest percentage change in the Graduate II pattern over the twelve-year period is for engineering -- which is projected to increase its proportion of the campus total from 10.90 to 16.94 per cent. The other principal change indicated in Table XII involves the multidisciplinary field of environmental studies, whose enrollment will be reflected in that for the

various supporting departments and colleges. The estimate of 400 students shown for 1980-81 in Category XI would represent 5.56 per cent of the campus total, which undoubtedly would be a substantial increase above the 1969-70 level. But the amount of gain cannot be estimated, since the number of students currently engaged in "environmental studies" is not available from existing registration records.

As already noted, the substantial increase in emphasis upon engineering assumes that the College of Engineering will change its orientation during the 1970's towards greater concentration upon problems related to the quality of the environment and to the interactional relationships between physical and social phenomena. This approach is discussed further in an example given in the next section (pp. 80-81).

Graduate II enrollment for 1980-81 also includes students who will be enrolled for a new doctorate in social work (not the Ph.D. degree), for the new degree of Doctor of Arts, and for such other "professional" doctorates as might be established.

Development Highlights

The following are outstanding examples of the developments being planned for the Urbana-Champaign campus during the coming decade: (a) the initiation of medical education and the expansion of instructional and research programs in related fields; (b) a new institute for the coordination and expansion of graduate education and research related to environmental problems; (c) the improvement of undergraduate education; (d) innovation in doctoral education, including the development of professional doctorates both in disciplinary areas (a new teaching degree of Doctor of Arts) and in areas related to public services (social work, public health); (e) expansion of international studies; (f) applications of computer-based technology and systems analysis.

The health sciences and professions. As already noted, the Urbana-Champaign campus is working with the College of Medicine at the Medical Center campus to establish a School of Basic Medical Sciences in Urbana-Champaign. The School is scheduled to admit a small pilot class of 10 students in September 1971, to be increased to 32 in 1972-73. Additional facilities are planned which would permit a further expansion to 130 first-year students by September 1974. This development is part of a far-reaching plan of reorganization of the College of Medicine under which the preclinical part of the M.D. curriculum will be concentrated into an intensive first year -- to be followed by three years of clinical education in semiautonomous schools of clinical medicine. The plan will be described in some detail in the following chapter on the Medical Center campus.

Among other objectives, the introduction of medical education into a setting of university departments of biological and chemical sciences should

lead to improved integration between the premedical and the medical curricula. Such integration, in turn, is designed to help shorten the overall period of medical education.

Students in the Urbana-Champaign School of Basic Medical Sciences will transfer to one or more of the College of Medicine's clinical schools for the completion of their M.D. training. It is expected, however, that clinical facilities adequate for an entering clinical class of 60 students (and a total of 172) would be available at the Urbana-Champaign campus by 1980. In that event, a separate school of clinical medicine would be established, with the operation both of this unit and of the School of Basic Medical Sciences becoming the responsibility of administrative officers and faculty at the Urbana-Champaign campus.

With the establishment of a full curriculum leading to the M.D. degree at the Urbana-Champaign campus, many collateral programs would be strengthened, and the medical program, in turn, would be strongly reinforced by the instructional and research activities in supporting areas. The work of the Environmental Studies Institute, for example, could be expanded by the inclusion of research and instruction related to environmental health that would not be possible without a medical school; and the training of medical students in community medicine and public health would be enhanced by the Institute's work. The medical school would profit greatly from existing teaching and research programs in various aspects of mental health, such as: clinical psychology, including the new curriculum leading to the professional degree of Doctor of Psychology; the Children's Research Center, an interdisciplinary facility for research on emotionally disturbed and mentally retarded

children; the Adler Zone Center, a branch of the Illinois Department of Mental Health located adjacent to the Children's Research Center; the Speech and Hearing Clinic.

The establishment of the School of Basic Medical Sciences has already led to a grant of \$600,000 from the Ford Foundation for research in reproductive physiology, to be conducted cooperatively by the Department of Animal Science in the College of Agriculture and the Department of Physiology and Biophysics in the College of Liberal Arts and Sciences. This program will be devoted primarily to basic research that is directly relevant to one of the most fundamental problems of our time, namely, population control.

The recently established doctoral program in the nutritional sciences, involving several departments in the Colleges of Agriculture and Liberal Arts and Sciences, will also benefit from the inauguration of medical education and associated research at the Urbana-Champaign campus.

Finally, these various developments should lead to the eventual establishment of a School of Public Health at the Urbana-Champaign campus with a program complementary to the one at the Medical Center campus. The two units would cooperate in sharing specialized faculty and research resources; but each would develop its own unique program suited to its regional setting and to the latter's special public-health needs.

Environmental Studies Institute. Although the Urbana-Champaign campus has very extensive programs of instruction and research in several colleges that are concerned with environmental studies, the need for a new organizational structure to provide focus and direction for these activities -- and to encourage their expansion -- has recently been recognized in a proposal for the establishment of an "Environmental Studies Institute," developed by a

special planning committee. An institute instead of a special college was recommended partly because of the magnitude and variety of the University's present involvement in this field at the Urbana-Champaign campus. It seemed imperative that these resources be coordinated and effectively utilized in any new or expanded program in this area; and participation in the work of an interdisciplinary institute has appeared to be the most effective organizational means to this end.

The Institute will be more than a clearinghouse or coordinating agency; it would be responsible for the direction of graduate programs and for the organization of specialized task forces to conduct long-term studies of the physical, biological, and social environment of man. This kind of organizational structure is in accordance with a recommendation made in a report issued recently by the Office of Science and Technology (a White House agency) on the role of universities in the improvement of the quality of the environment.²⁶

The Institute's program will be concerned both with the correction of undesirable conditions (e.g., pollution) and with the long-term evaluation of the social and technological development and planning for control of environmental quality. The figures included in Table XII indicate that by 1980 a total of 625 graduate students would be involved in the Institute's programs of graduate study. This would represent about 11 per cent of the total growth in graduate enrollment projected for the Urbana-Champaign campus between 1969-70 and 1980-81. These students would be enrolled in the following broad areas: arts and environmental design, biological sciences, agricultural sciences, physical sciences, engineering, social sciences.

²⁶Office of Science and Technology, The Universities and Environmental Quality -- Commitment to Problem Focused Education. Superintendent of Documents, U. S. Government Printing Office, 1969.

Undergraduate education. The University's growing responsibilities for instruction, research, and public service during the past twenty-five years have fallen most heavily upon the Urbana-Champaign campus. Hence, the latter has had the principal share of the difficulties cited in Chapter III as arising from insufficient faculty (and other) resources in relation to the widening public demand for educational services. Undergraduate education has been adversely affected as a consequence of these conditions, particularly at freshman-sophomore level.

The improvement of undergraduate instruction, therefore, will be one of the top-priority tasks at the Urbana-Champaign campus during the next decade. Lower-division enrollment will henceforth be stabilized at its present level, and by 1980-81 there will be an increase of only 1,452 upper-division students above the 1969-70 figure (from 11,548 to 13,000, or a gain of 12.5 per cent). This virtual cessation of overall undergraduate growth will permit the campus to devote appropriate attention to the several important aspects of the undergraduate education that need improvement. These include faculty (especially the role of teaching assistants), curricula, teaching methods, evaluation procedures, and campus-wide administrative arrangements for planning, coordinating and evaluating departmental and college programs. Particular attention will be given to the involvement of students in these tasks, and to the needs of special groups of undergraduates (for example, the educationally disadvantaged).

A major step towards the initiation of the new program for the improvement of undergraduate education was taken recently when the Chancellor at the Urbana-Champaign campus created a "Commission on Undergraduate Education and Life." The Commission will consist of students, faculty members, and administrative officers chosen to be widely representative of various

constituencies at the campus. It has a broad mandate to propose improvements in all phases of undergraduate education -- especially the freshman and sophomore years -- as well as to recommend changes in housing regulations and other aspects of campus life.

Innovations in doctoral education. Reference has already been made to the Doctor of Arts degree, and this degree in economics was approved by the Board of Trustees in July 1970. It is expected to be the forerunner of similar programs in other fields designed to prepare candidates for careers in college teaching. It will be an alternative to the research-oriented Ph.D. degree, but will have equivalent scholarly requirements and standards. The regular course work and examinations will be essentially similar in the two programs -- as the preliminary examination will be. But in lieu of the research dissertation required for the Ph.D. degree, students usually will be required to complete a program of laboratory training in teaching technology and an internship in teaching.

At present at the Urbana-Champaign campus, some ten doctoral degrees are awarded other than the Ph.D. degree: D.Art Ed. (art), D.B.A. (business administration), Ed.D. (education), D.L.S. (library science), J.S.D. (law), D.Mus.A. (music), D.Mus.Ed. (music), D.Psych. (psychology), D.V.M. (veterinary medicine), J.D. (law). It is expected also that new professional doctorates in appropriate fields will be proposed during the next ten years -- in addition to the degree of Doctor of Social Work now before the Board of Higher Education and the prospective M.D. degree discussed above. Public health and public administration are fields in which professional degrees are badly needed, and urban planning is another likely possibility.

International studies. The University has developed extensive programs in international studies at the Urbana-Champaign campus during the past decade, and hopes to continue and expand these programs in the years ahead.

At present, there are five centers for the encouragement of graduate study and research in various areas: Asian Studies, International Comparative Studies, International Education and Research in Accounting, Latin-American Studies, and Russian and East European Studies. A Center for African Studies has been approved by the Board of Trustees, and will be submitted soon to the Board of Higher Education.

These centers are primarily coordinating agencies, which also seek funds for traineeships, library materials, and other special purposes. They have important roles in planning interdisciplinary curricula and cooperative studies.

The College of Agriculture has been especially imaginative in developing instructional programs related to its technical-assistance projects overseas, which are supported by the Agency for International Development. In many universities, AID projects have not provided much support to the regular educational and research programs of the campuses conducting them. But the University of Illinois has taken pioneering steps to show that this need not be the case. The on-going teaching and research interests of faculty members have been served by the overseas projects -- particularly those in India -- in ways that have been highly beneficial both to the University departments and to the overseas educational institutions being assisted.

Although domestic affairs in this country in recent years have tended to distract attention and divert support from international studies, it would be extremely unfortunate if these programs do not continue to receive

the encouragement they deserve. The University will make every effort to maintain and improve the work of the several centers and the international program in agriculture. But increased federal funding is essential -- especially to meet the costs of overseas study and research -- and it is hoped that federal policy reducing funds for international programs can soon be reversed.

Applications of computer-based technology and systems analysis.

The University of Illinois has resources in computer science and technology at the Urbana-Champaign campus that probably are unsurpassed at any other university in the country. The Department of Computer Science, the Coordinated Science Laboratory in the College of Engineering, the Computer-Based Education Research Laboratory, Civil Engineering's systems program, the ILLIAC IV project, and the related Center for Advanced Computation -- all these and other departmental programs utilizing computers provide the technical foundation for highly promising advances during the next decade in at least two major directions:

- (a) multidisciplinary investigation of complex environmental and social systems;
- (b) innovative applications in such areas as education, planning, administration, and the formulation of public policy. The following are three examples of such applications:

Coordination of engineering and social sciences. It will be recalled that the projected distribution of Graduate II enrollment for 1980-81 among eleven broad areas of study showed a marked percentage increase for engineering over that field's proportion of the Urbana-Champaign campus' 1969-70 enrollment at this level. This proposed change rests upon two main premises: (a) that the College of Engineering will shift its emphasis substantially towards greater concern with the relationships between physical and social phenomena, between the world of technology and society; (b) that social scientists will join engineers and physical scientists in the study of these relationships, with a view to improving the quality of man's total environment and thus contributing to the development of a more humane society.

One of the principal agencies through which these multi-disciplinary programs will be conducted is the Coordinated Science Laboratory of the College of Engineering. This Laboratory was established some twenty years ago primarily for research and development on electronic-computer control systems and related problems (its original name was "Control Systems Laboratory"). During the past decade, however, both the name and the mission of the Laboratory have been changed to reflect a broadening of interests beyond physical systems. Illustrations of the new orientation include the development of the PIATO system for computer-based education (now established in its own laboratory) and a "systems analysis" of the physical-economic-demographic development of an urban community.

Through the Coordinated Science Laboratory, the resources of various departments of the College of Engineering and those of several departments in other colleges will be directed towards multidisciplinary studies of interactions between man's physical and social environments. The methodology of systems analysis will be applied, for example, to problems in urban and regional planning -- with the involvement of engineers, social scientists, professional planners, and officials concerned with the formulation of public policies and action programs.

The ILLIAC IV computer system now under development at the Urbana-Champaign campus will provide a unique and powerful resource for the study of a wide range of complex problems that are not now amenable to adequate scientific analysis. These include numerical weather prediction, natural-resource allocation, large-scale agricultural planning (on a nation-wide or world-wide basis), and multidimensional hydrodynamic calculations. Using ILLIAC IV, a newly established Center for Advanced Computation will conduct multidisciplinary research on such problems, in cooperation with faculty members throughout the University and in other institutions.

Environmental studies, for example, involve a class of problems concerning the complex, interactive relationships between plants and animals (including man) and the environment. The rapidly increasing world-population pressures are generating an acute need for the identification of both qualitative and quantitative relationships, knowledge of which will permit the evolution of positive, rational techniques for management of our finite natural resources. Among the problems to be considered are: simulation of the photosynthesis and transpiration of cultivated plants, with important implications for agricultural production; the effects of periodic flooding on a complex plant population; simulation of the ecology of fish populations, in both inland lakes and ocean, a study in which account must be taken of climatological and predator-prey factors;

and the problems of most direct interest, namely, human populations in their natural and artificial environments.

Computer-based education. The research and development program in educational technology conducted by the Computer-Based Education Research Laboratory and associated with the PLATO IV system,²⁷ promises to be one of the most far-reaching breakthroughs yet achieved in educational technology. Now towards the end of a ten-year period of development and testing, arrangements are being planned for a large-scale pilot project involving elementary and secondary schools, and institutions of higher education.

It is believed that both the technological properties of the system and the associated pedagogical innovations will lead to widespread utilization of the PLATO system, and hence to great improvement in the quality of education at lower cost in the areas of application.

An instance of productive cooperation in the application of the PLATO system to a particular educational problem has been the joint project with the College of Education at the Urbana-Champaign campus in the teaching of educationally disadvantaged children. That College's Curriculum Laboratory has been using the PLATO system for some time in its experimental studies of curricular content and teaching methods for such children in certain public schools.

The program of computer-based education associated with PLATO IV serves to illustrate the type of "public-service" contribution that only an educational institution such as the University of Illinois can make. But for the background of the University's interest and resources in computer technology and related engineering development, the emergence of the PLATO system would not have been possible.

²⁷As indicated in an earlier footnote, the acronym PLATO refers to the name "Programmed Logic for Automatic Teaching Operations."

V. THE MEDICAL CENTER CAMPUS

An initial version of the University's development plan for the Medical Center campus to 1980 was included in a report submitted to the Director of the Study of Education in the Health Fields in December 1967.²⁸ The outcome of that study, conducted under the direction of Dr. James A. Campbell, was the approval in June 1968 by the Illinois Board of Higher Education of a comprehensive set of recommendations that have since served as a "Master Plan" for higher education in the health sciences and professions.²⁹

In general, most of the University's proposals for expansion in these fields were substantially endorsed in the final version of the report adopted by the Board of Higher Education. Since that time, significant steps towards the implementation of the program have been taken -- partly in connection with budget requests and partly through the establishment of new organizational arrangements. The progress made to date at the Medical Center campus will be outlined in this chapter, including modifications of the plan that have been made in the light of subsequent developments.

²⁸ Proposals for the Expansion of Education in the Health Professions -- 1967-1980. A report submitted to the Director of the Study of Education in the Health Fields, Illinois Board of Higher Education. University of Illinois, December 13, 1967.

²⁹ Education in the Health Fields for State of Illinois, Volumes I and II. Board of Higher Education, June 1968.

Enrollment Growth at the Medical Center Campus

The problem of defining precisely the enrollment increases projected for "the Medical Center campus" is somewhat complicated by the fact that the College of Medicine will have semiautonomous schools located away from that campus -- in Peoria, Rockford, and Urbana-Champaign. For the purposes of this report, however, enrollments for the first two of these schools will be counted with those for the Medical Center campus proper; but for the Urbana-Champaign campus, the students will be counted officially with the enrollment for that campus. (In one tabulation, all students of the College of Medicine are included, irrespective of location.)

The enrollment projections for the Medical Center campus as a whole through 1980-81 are presented in Table XIII on the following page. These figures show that the total enrollment would increase from 2,933 students in the fall term of 1969-70 to 7,400 students by the fall term of 1980-81. Thus the overall increase would be approximately 152 per cent, with all of the professional schools sharing in the growth in varying degrees.

The figures in Table XIV (p. 86) summarize the increases from 1969-70 to 1980-81 by colleges or schools (including graduate students). Because of the commingling of graduate and professional students in these composite totals, it is difficult to evaluate the significance of these varying rates of growth between 1969 and 1980. The College of Medicine shows the greatest numerical increase, due primarily -- as will be seen later -- to an increase from 798 to approximately 1,800 candidates for the M.D. degree (including those to be enrolled at the Urbana-Champaign campus in a unit of the College of Medicine); the remainder of the College's growth would be in graduate students, mainly in the basic medical sciences. The pattern is similar for the College of

TABLE XIII

ENROLLMENT GROWTH FOR THE MEDICAL CENTER CAMPUS AND
THE SCHOOLS OF MEDICINE IN PEORIA AND ROCKFORD^a

Fall Term	Lower Division ^b	Upper Division ^b	Graduate I- Professional ^b	Graduate II ^c	Total
1969	297	732	1,681	223	2,933
1971	425	904	1,891	294	3,514
1972	445	1,047	2,054	366	3,912
1973	510	1,192	2,239	432	4,373
1974	562	1,323	2,466	498	4,849
1975	581	1,467	2,737	588	5,373
1980	700	1,900	3,940	860	7,400

^aThe figures for 1969 refer to actual enrollments; those for 1971 and later years are projections. The table does not include figures for the students who will be enrolled in the prospective School of Basic Medical Sciences at the Urbana-Champaign campus.

^bAlthough all students at the Medical Center campus are enrolled in "professional" curricula, candidates for baccalaureate degrees (nursing, pharmacy, associated medical sciences) and enrollees in parental programs are classified in the undergraduate categories "Lower Division" and "Upper Division."

^cAs indicated in footnote (d) to Table IV, the category "Graduate II" includes all students who have earned at least 32 semester hours or 48 quarter hours of graduate credit (which is equivalent to an academic year of full-time work). Since programs for the master's degree may require more than this amount of credit, many students in these programs will be classified as "Graduate II."

TABLE XIV

MEDICAL CENTER CAMPUS: ENROLLMENT INCREASES
FROM 1969-70 TO 1980-81 FOR THE SEVERAL COLLEGES AND SCHOOLS

		Baccalaureate		Professional		Graduate		Total
		Lower Division	Upper Division	Degree Candi- dates	Post- doctoral	I	II	
Dentistry	1969	22		377 ^a	27	35	13	474
	1980	165		749	75	54	33	1,076
	Increase	143		372	48	19	20	602
	Per cent	650%		99%	178%	54%	154%	127%
Medicine	1969			798	318	89	150	1,355
	1980			1,732 ^b	350	300	383	2,765 ^b
	Increase			934	32	211	233	1,410
	Per cent			117%	10%	237%	155%	104%
Nursing	1969	91	193 ^c			20	17	321
	1980	265	534 ^c			415	300	1,514
	Increase	174	341			395	283	1,193
	Per cent	191%	177%			1,975%	1,665%	372%
Pharmacy	1969	184	449 ^d			17	43	693
	1980	270	700 ^d			115	79	1,164
	Increase	86	251			98	36	471
	Per cent	47%	56%			576%	84%	68%
Associated Medical Sciences	1969		90					90
	1980		666					666
	Increase		576					576
	Per cent		640%					640%
Public Health	1969					--	--	--
	1980					150	65	215
	Increase					150	65	215
Totals	1969	297	732	1,175	345	161	223	2,933
	1980	700	1,900	2,481	425	1,034	860	7,400
	Increase	403	1,168	1,306	80	873	637	4,467
	Per cent	136%	160%	111%	23%	542%	286%	152%

Includes unclassified dental students.

These data do not include 130 students in the School of Basic Medical Sciences at the Urbana-Champaign campus; but they do include students in the two schools at Peoria and Rockford.

Includes continuation nursing (RN) students.

Includes unclassified pharmacy students.

Dentistry, which would approximately double its enrollment for the D.D.S. degree, and show even greater percentage increases in paradecimal students and in graduate students.

By far the largest percentage increments of growth during this period are projected for the College of Nursing and the School of Associated Medical Sciences -- with about half of the increase in the case of nursing being at the graduate level. The emphasis upon graduate study in nursing is justified by personnel shortages of three types which should be met by nurses with graduate training: teachers for junior colleges and four-year colleges, as well as for diploma schools; nursing administrators for educational institutions, hospitals, and other agencies devoted to health care; nurse specialists for advanced clinical services.

The growth projected for the School of Associated Medical Sciences is in accordance with the recommendation approved by the Board of Higher Education. The need for technically trained supporting personnel in the health fields is very great, and the output of this School -- all at the baccalaureate level -- will help towards meeting that need.

The College of Pharmacy is the only such school in Illinois, and the planned increase corresponds approximately to conservative estimates of the growth needed to parallel increases in the general population.

The new School of Public Health is scheduled to open in the fall term of 1971-72, with a beginning graduate class of some 20 to 25 students. It is projected to increase to 215 students by 1980-81.

College of Medicine

The University has embarked upon a comprehensive program of expansion and innovation in medical education that is unparalleled in this country. Encouraged by the endorsement given to its program two years ago by the Board of Higher Education and by the funding thus far provided, the College of Medicine and its affiliated training centers can look forward with confidence towards the full achievement of the broad objectives outlined in the University's earlier statement:

1. More than doubling the number of graduates with the M.D. degree. This would fulfill Recommendation 13 in the Board of Higher Education's report that the 1967-68 number "be increased by at least 200 as rapidly as planning, implementation, and financing can be accomplished."
2. Shortening the average time required to earn the M.D. degree.
3. Curricular innovation both in the basic medical sciences and in clinical training.
4. Expanding medical education into regional centers outside the Chicago area -- partly for the purpose of strengthening health-care resources in downstate Illinois and partly as a means to increasing the number of physicians remaining in Illinois to practice medicine.
5. Increasing the University's involvement in the graduate training of physicians -- looking towards the consolidation of what is now internship training into the predoctoral period of clinical training, and cooperating with specialty boards in shortening and improving residency training.
6. Expanding and improving programs for the continuing education of practicing physicians -- initially through the development of pilot programs in the new medical centers to be established in Peoria and in Rockford.
7. Participating in research and development on the delivery of health care, in cooperation with other colleges and schools at the Medical Center campus and elsewhere in the University.

Reorganization of the College of Medicine. The key factor in the College of Medicine's plan for achieving the foregoing objectives has been the reorganization of the College into semiautonomous schools of two types: (a) schools of basic medical sciences, which will offer the formal curriculum in these subjects within a concentrated first-year program; (b) schools of clinical medicine offering a three-year curriculum (which looks toward including the present internship in the last year). Each of these schools will have its own dean and independent faculty -- under the overall jurisdiction of the College of Medicine and its Executive Dean.

As already noted, two schools of basic medical sciences are being developed now: one located at the Medical Center campus (including the present basic-science departments there); one at the Urbana-Champaign campus. Discussions are under way with other institutions which might result in the establishment of affiliated "schools" offering the one-year curriculum in basic medical sciences. The possibility of establishing such a school at the Chicago Circle campus is also being discussed.

Four schools offering the three-year curriculum in clinical training for the M.D. degree are in existence or in process of being established: The Abraham Lincoln School of Medicine, comprising the clinical faculty of the College of Medicine prior to its reorganization; two new clinical schools now being developed in regional centers outside Chicago (Peoria School of Medicine and Rockford School of Medicine); a consortium of six community hospitals in the Chicago metropolitan area which are in process of developing joint affiliation arrangements with the College of Medicine in order that instruction might be offered covering the three-year clinical curriculum.³⁰ It is expected that

³⁰The following are the six hospitals in the consortium: Illinois Masonic Hospital, Louis A. Weiss Memorial Hospital, Lutheran General Hospital, MacNeal Memorial Hospital, Mercy Hospital, and Ravenswood Hospital.

as soon as adequate clinical facilities can be made available, a three-year clinical school would be established in Urbana-Champaign. The possibilities for such schools in Decatur and the Quad-Cities will also be explored.

Shortening the period of medical education. A total span of twelve years beyond high school is not unusual in the education of a physician: four years of college, four years of medical school, and four years of internship-residency training. In certain specialties, the period may be longer. One of the major purposes of the new program of the College of Medicine is to shorten this training period for the typical student by at least two years. One year would be saved from the combined undergraduate-medical school span, which could be extended to two years in exceptional cases through careful articulation between the two levels and flexible requirements. Another year would be saved through the elimination of the internship (which will require a change in licensing laws in some states).

Enrollment growth. In the earlier enrollment summary for the Medical Center campus, it was noted that an increase from 1,355 students in 1969 to 2,895 students in 1980-81 is being planned. Detailed breakdowns of these enrollments and those for the five intervening years (1971-72 to 1975-76) are shown in Table XV on the following page. Students are classified there in accordance with the type of curriculum or level of training in which they are involved. The number of students is shown for each of the four years of the M.D. curriculum, thus making it possible to see the general pattern of expansion that leads by 1980 to an entering class of 500 students and 454 M.D. graduates. These figures include the students expected to be enrolled in the School of Basic Medical Sciences at the Urbana-Champaign campus (130 by 1974), although they will not be included in other enrollment counts in this report

TABLE XV

COLLEGE OF MEDICINE: ENROLLMENT GROWTH TO 1980-81 -- ALL SCHOOLS

Fall Term	M.D. Curriculum					Interns and Residents	Graduate		Total
	First Year	Second Year	Third Year	Fourth Year	Total M.D.		I	II	
1969	225	208	188	177	(798)	318	89	150	1,355
1971	257 ^a	214	214	202	(887)	320	104	168	1,479
1972	257 ^a	244 ^b	214	214	(929)	320	116	180	1,545
1973	257 ^a	244 ^b	244	214	(959)	320	127	199	1,605
1974	428 ^a	244 ^b	244	244	(1,160)	320	141	218	1,839
1975	428 ^a	407 ^b	244	244	(1,323)	320	158	243	2,044
1980	500 ^a	454 ^b	454 ^b	454 ^b	(1,862)	350	300	383	2,895

^aThese figures include enrollments in a proposed first-year School of Basic Medical Sciences at the Urbana-Champaign campus, which plans to begin instruction with a small class in 1971-72 and to increase enrollment to a total of 130 by 1974-75 if the Medical Sciences Building can be completed in time. The remainder of the first-year students would be enrolled in an expanded School of Basic Medical Sciences at the Medical Center campus, or in one or more affiliated schools elsewhere.

^bPossibly as early as 1971-72, clinical instruction of a limited number of students enrolled at the Medical Center campus is planned to begin in Peoria and in Rockford. As soon as facilities and other resources are available, the clinical schools being organized at the latter two locations will enroll students for their second, third, and fourth years of clinical training.

for the Medical Center campus. The total enrollment for the M.D. degree by 1980 is projected to be 1,862 students, which would be more than double the size of any present college of medicine.

The number of interns and residents in the University of Illinois Hospital is expected to increase from the present figure of 318 to 350 by 1980. The latter figure does not include interns and residents who will be added at the teaching hospitals in Peoria and in Rockford.

Substantial increases in the number of graduate students are indicated in Table XV. These will include mainly students preparing for teaching careers in the basic medical sciences, but it is expected that a substantial number of prospective teachers of clinical subjects will enroll for work leading to the master's degree.

Department of Family Practice. This newly established department will be the basis for major innovations in clinical training -- the purpose being to produce practitioners capable of rendering comprehensive, personal health care to a wide spectrum of patients. The trainee in family practice would have a substantially broader educational experience than is customary for students electing earlier to concentrate in one of the medical specialties -- including studies in the behavioral and social sciences. It is expected also that students in this program would receive far more training in ambulatory care than is now customary in the regular curriculum. For this purpose, intensive use would be made of neighborhood community-health centers near the Medical Center campus. Programs in family practice will also be established in the Peoria and Rockford medical schools.

College of Dentistry

Substantial progress is being made by the College of Dentistry towards the goals outlined in the University's proposals submitted to the Board of Higher Education on December 13, 1967.³¹ The funding of most of the needed new facilities is already assured, and the expansion of enrollment should be sufficient to meet the University's quota of additional dental graduates by the year 1980.

Enrollment growth. The enrollment projections for the College of Dentistry through 1980-81 are shown in Table XVI on the following page. The existing enrollments for 1969-70 and those projected for the years indicated through 1980-81 are classified by the major types of programs conducted by the College of Dentistry.

The figures in the first section show enrollment by classes in the D.D.S. curriculum (excluding unclassified students). The total is projected to increase from 371 in the fall of 1969 to 729 in 1980 (representing a gain of 96 per cent). Enrollment in the first-year class (99 in the fall of 1969) will increase to 130 in September 1971, upon completion of Phase I of the College's new building. Further growth to 165 first-year students is planned for the fall of 1973, when Phase II of the new construction program is scheduled to be finished. The funding of this addition has already been authorized by the Illinois General Assembly, and it is anticipated that the construction can be completed on schedule.

Additional space would be necessary to accommodate the further increment of 25 students, to bring the first-year total to 190 shown in Table XVI.

³¹Proposals for the Expansion of Education in the Health Professions -- 1967-1980. A report submitted to the Director of the Study of Education in the Health Fields, Illinois Board of Higher Education. University of Illinois, December 13, 1967.

TABLE XVI

COLLEGE OF DENTISTRY: ENROLLMENT GROWTH TO 1980-81

Fall Term	D.D.S. Curriculum				Unclassified	Paradental	Graduate		Postgraduate	Total
	First Year	Second Year	Third Year	Fourth Year			I	II		
	Total D.D.S.									
1969	99	92	93	87	6	22	35	13	27	474
1971	130	99	90	87	5	50	35	19	25	540
1972	130	121	94	87	5	50	35	19	25	566
1973	165	122	114	92	5	100	39	27	60	724
1974	165	154	116	108	5	142	42	30	60	822
1975	165	156	145	112	5	142	43	30	60	858
1980	190	182	179	178	20	165	54	33	75	1,076

Consideration will be given to a further increase of 10 or more students, to bring the entering class to 200 more students -- if the need exists and the required facilities can be provided. A first-year class of some 220-225 students would be necessary if the number of graduates were to be increased by 125 over the present level by 1980 (as recommended by the Board of Higher Education in Education in the Health Fields for State of Illinois, p. 39).

A marked increase in the number of paradenal students is projected -- from 22 in 1969-70 to an estimated 165 by 1980-81. This total would be distributed approximately as follows among the three paradenal categories: dental assistants, 60; dental hygienists, 53; dental technicians, 52. Dentists are increasingly using paradenal personnel for a variety of routine tasks, a practice that substantially improves the utilization of the supply of dentists. The curricula for these three paradenal programs vary in length, as follows: dental assistants, nine months (a full academic year); dental hygienists, two academic years; dental technicians, two academic years. The only program presently being offered is that for dental assistants. The two additional programs are scheduled to be initiated in 1973-74, when Phase II of the Dentistry Building is completed.

Modest increases in graduate enrollment are projected -- from a total of 48 in 1969-70 to 87 in 1980-81. The purpose of these increases is to meet the following needs for professional personnel: additional academic staff in colleges of dentistry, increasing numbers of research workers, and clinical specialists.³² Approximately a threefold increase in postgraduate education is projected -- the purpose being to maintain or improve the professional skills of practicing dentists.

³² Unlike the field of medicine, whose specialists are trained in hospitals as residents, dentistry and nursing provide specialty training through graduate programs in universities.

Participation in team practice of comprehensive health care. An expanded role for the College of Dentistry is planned through the participation of several of its departments in the health-care program of the University of Illinois Hospital. It is anticipated that a department of dentistry with sections representing the various special departments will be developed within the reorganization now under way in the Hospital. These developments will make it possible to provide an educational experience for dentists that will emphasize comprehensive oral care for patients and will prepare the student for more meaningful participation in the team practice of comprehensive health care.

College of Nursing

With the occupancy of the new College of Nursing Building during 1969-70, the University is in position to move rapidly towards meeting the enrollment projections for nursing education included in its 1967 planning report (Proposals for the Expansion of Education in the Health Professions -- 1967-1980). Although additional space will be required before all of the quotas can be met, the new facilities will accommodate the greater part of the increases projected in Table XVII.

TABLE XVII

COLLEGE OF NURSING: ENROLLMENT GROWTH TO 1980-81

Fall Term	<u>Baccalaureate Curriculum</u>				Continua- tion (RN)	<u>Graduate</u>		Total
	Second Year	Third Year	Fourth Year	Total B.S.		I	II	
1969	91	70	67	(228)	56	20	17	321
1971	175	128	99	(402)	70	69	52	593
1972	190	149	115	(454)	75	126	96	751
1973	200	161	135	(496)	80	153	119	848
1974	205	170	145	(520)	80	179	146	925
1975	214	175	153	(542)	84	210	193	1,029
1980	265	234	199	(698)	101	415	300	1,514

The projected increase in enrollment in the curriculum leading to the degree of B.S. in nursing (from 228 in 1969 to 698 in 1980) would represent an increase of 206 per cent in the number of baccalaureate students. The number of fourth-year students would increase from 67 to 199 by 1980-81 -- which would make a substantial addition to the supply of nursing students who might become candidates for graduate degrees.

In its 1968 report, the Board of Higher Education approved the following recommendation concerning graduate education for nurses:

"Public universities and colleges -- the annual number of master's degree graduates from the University of Illinois College of Nursing be increased by 300 by the year 1980. A doctoral degree program in nursing be established at the University of Illinois College of Nursing to graduate 50 students a year by the year 1980."
(Education in the Health Fields for State of Illinois,
p. 45.)

The Board's recommendation reflected the advice of the Illinois Study Commission on Nursing, which recognized that perhaps the greatest need in this field is for graduate education of nursing teachers, administrators, and clinical specialists. The supply of teachers must be increased if the massive expansion of enrollment in baccalaureate and junior-college programs in nursing is to be achieved. The figures in Table XVII show that the University's College of Nursing is prepared to increase its graduate enrollment by 1980 to the point where approximately half of its total enrollment of 1,514 students would be at that level (the graduate total being 715).

The number of candidates for the doctorate in nursing is somewhat difficult to predict, but it is expected that some 50 to 75 students might be enrolled in this advanced curriculum by 1980.

College of Pharmacy

The College of Pharmacy is the only educational institution for the training of professional pharmacists in the State of Illinois. Hence, it must accommodate whatever increases in enrollment might be needed by the year 1980. The Board of Higher Education's Recommendation No. 50 estimates this number as follows:

"[That] The annual number of graduates of the University of Illinois College of Pharmacy be increased by 100 by the year 1980." (Education in the Health Fields for State of Illinois, p. 48.)

At the time this recommendation was developed, the actual enrollment reported for the fourth-year pharmacy curriculum was 103, which would mean that the recommended increase by 1980 would be slightly more than 200. The figures presented in Table XVIII show that this is approximately the level projected by the University in the present plan.

TABLE XVIII

COLLEGE OF PHARMACY: ENROLLMENT GROWTH TO 1980-81

Fall Term	<u>Baccalaureate Curriculum</u>					Unclassi- fied	<u>Graduate</u>		Total
	First Year	Second Year	Third Year	Fourth Year	Total B.S.		I	II	
1969	184	126	174	142	(626)	7	17	43	693
1971	200	169	144	128	(641)	10	22	55	728
1972	205	178	148	144	(675)	10	25	61	771
1973	210	182	162	148	(702)	10	28	67	807
1974	215	190	167	150	(722)	10	33	74	839
1975	225	195	169	153	(742)	10	38	82	872
1980	270	249	230	211	(960)	10	115	79	1,164

The overall increase in enrollment for all curricula in the College of Pharmacy amounts to 68 per cent -- from 693 in 1969 to 1,164 in 1980. The percentage increase for the baccalaureate program is slightly below this figure (from 626 to 960, or some 53 per cent). The size of the fourth-year class indicates approximately the number of graduates to be expected, which is shown as 211 -- in comparison with 142 in 1969 and 103 in 1967.

Graduate enrollment is projected to have a considerably higher percentage increase -- from 60 students in 1969 to 194 in 1980 (223 per cent). The purposes of the increases in graduate enrollment are to meet the need for replacement teachers, for the increasing involvement of pharmacists in comprehensive health care, and for research pharmacists who would work in multidisciplinary teams.

Associated Medical Sciences

The University of Illinois currently offers at the Medical Center campus baccalaureate programs in four paramedical specialties, which are administered by the School of Associated Medical Sciences (a unit within the College of Medicine): medical arts, medical records administration, medical technology, and occupational therapy. Enrollment in these programs is relatively small; but the School plans to increase its student body markedly during the next ten years and to add several new programs. This plan is generally in accordance with Recommendation No. 60 of the Board of Higher Education, which suggests that the School of Associated Medical Sciences be transformed into a "Center for Health Occupations Education" and that "this Center be able to graduate 500 additional people annually in the allied health fields by 1975." The University has not yet taken steps to develop a new organization of the type described, but continuing attention will be given to the problem. Since a substantial part of the entire baccalaureate program for degrees in these fields is administered by the undergraduate colleges, it will be necessary to have their cooperation in such a program of expansion. In particular, greater participation by the Chicago Circle campus is anticipated.

The detailed program of enrollment expansion for the School of Associated Medical Sciences is as follows:

	<u>1969</u>	<u>1975</u>	<u>1980</u>
Medical arts	12	32	40
Medical records administration	15	60	60
Medical technology	20	100	100
Occupational therapy	43	100	100
Medical dietetics (1970)		60	60
Physical therapy (1971)		90	100
Other new programs		<u>86</u>	<u>206</u>
Total	<u>90</u>	<u>528</u>	<u>666</u>

These projections will be the subject of continuing study and will be appropriately revised in the light of future needs and other conditions. One of the limitations to more rapid expansion in these fields thus far has been the lack of space. Assuming the provision of adequate facilities, it should be possible to meet the enrollment target recommended for the University in Education in the Health Fields for State of Illinois.

One of the future objectives of the School will be the training of teachers who will be needed for the state-wide expansion of enrollment in baccalaureate and in associate-degree programs (that are being expanded rapidly in the junior colleges). Although no graduate enrollment has been included in the projections thus far established, it seems likely that a graduate program will be necessary in order to help meet the need for teachers and administrators in this field.

School of Public Health

The Board of Trustees gave formal approval to the establishment of a School of Public Health at the Medical Center campus at its meeting on May 20, 1970. It is expected that an initial class of 20 students can be admitted to the program for the master's degree (M.P.H.) in 1971-72 -- assuming that the Board of Higher Education confirms the approval given to the program in 1968 in Education in the Health Fields for State of Illinois (p. 35, Recommendation No. 33):

"[That] Graduate programs of public health be established by the University of Illinois capable of enrolling 100 master's degree candidates and 40 doctoral degree candidates."

The graduate programs in public health will be heavily interdisciplinary, relying particularly upon faculty members at the other two campuses for instructional and research support in the behavioral and social sciences. The biological and engineering fields at the other campuses -- especially the Chicago Circle campus -- will also support special aspects of the public-health program. But the School of Public Health will have a "core" faculty in the following fields: epidemiology, biostatistics, environmental health, health-care administration, health-care economics, and medical sociology.

The School would develop programs of professional study leading to the degrees of Master of Public Health and Doctor of Public Health in accordance with the "Guidelines for Accrediting Schools of Public Health" formulated by the American Public Health Association. Two types of programs are recognized in these Guidelines: (a) one leading to a technical-scientific degree, with emphasis upon specialty training; (b) the other leading to a generalist-administrative degree. The enrollments projected for these programs are as follows:

	<u>1971</u>	<u>1975</u>	<u>1980</u>
Graduate I	20	100	150
Graduate II		40	65
Total	<u>20</u>	<u>140</u>	<u>215</u>

These figures are subject to change after the School has been organized and after more detailed planning has been accomplished. A definite date cannot be set for the initiation of the doctorate in public health, since this would depend upon the rate of development of the master's program and the cultivation of the necessary relationships with the supporting disciplines.

Center for the Study of Patient Care and Community Health. Of special importance to the initiation and successful development of the doctoral program would be the establishment of the Center for the Study of Patient Care and Community Health. The Board of Trustees approved the establishment of this Center in conjunction with its approval of the School of Public Health. It will provide an interdisciplinary framework for research on the delivery of health services, and for studies related to the complex social conditions that influence the health of various segments of the population. The Center will invite the cooperation of other colleges and schools at the Medical Center campus and at each of the other two campuses of the University. Furthermore, it would seek to enlist the cooperation, where appropriate, of public agencies concerned with health care and of other universities with which it might share interest and resources in the study of particular problems.

Continuing Education in the Health Fields

The University plans to develop during the next ten years a comprehensive, state-wide program of continuing education for the benefit of practitioners in all of the health professions.

As an initial step in this direction, a pilot program in medical education is being organized in connection with the establishment of the two new medical schools in Peoria and in Rockford. The Center for Educational Development in the College of Medicine has responsibility for conducting this experimental program, which will involve the use of a two-way telecommunication network linking the Medical Center campus to the two regional centers. Unfortunately, the Governor's recent veto of an appropriation bill that would have provided funds for this equipment will retard the implementation of the plan. But the development of educational materials and procedures will continue, and it is hoped that the necessary funds for equipment can be provided in FY 1972.

One of the immediate purposes to be served by the program of continuing education in Peoria and Rockford will be to assist in the development of faculties for their new medical schools. The transformation of community hospitals into teaching hospitals, with qualified senior faculties and house staffs, will require an extensive program of training -- particularly in the processes of medical education. A substantial part of this training can be provided by an innovative program of continuing education.

As rapidly as resources can be provided, the Center for Educational Development will expand its program to include the other health professions, and will extend its offerings to other regions of the State.

The University of Illinois Hospital

The provision of modern patient-care facilities for the University of Illinois Hospital is the key to the effective implementation of most of the development plan outlined in the preceding pages for the Medical Center campus. Although the College of Medicine -- and especially its Abraham Lincoln School of Medicine -- would benefit most from the modernization of the present Hospital's outmoded facilities, all of the other colleges and schools have plans calling for increasing use of the Hospital -- as the campus moves towards the integration of the services provided by all of the health professions under programs of comprehensive health care and health maintenance. The Hospital will be a central "laboratory" also for the development of the instructional material used in the state-wide program of continuing education.

Historically, the University of Illinois Hospital has been essentially a teaching and research "laboratory" for the full-time clinical faculty of the College of Medicine (now The Abraham Lincoln School of Medicine). As such, it has provided the core component of clinical instruction given to the College's medical students and to a large number of interns and residents. At the same time, the Hospital has served as a referral institution for specialized treatment and research related to problems encountered by practicing physicians throughout the State; and it has provided hospital care for a large local clientele coming mainly from the environs of the Medical Center campus.

That the Hospital's facilities have been seriously inadequate even for these historic functions has been well documented in the 1965 study conducted by the Hospital Planning Council of Metropolitan Chicago and published in November 1966. One portion of this report states:

"There is no doubt that lack of sufficient appropriations from the state and county legislative bodies has resulted in seriously deteriorated facilities in both Cook County Hospital and the University of Illinois Research and Educational Hospitals (the University of Illinois Hospital). This is particularly deplorable when one considers the critical function these two institutions serve, not only in the provision of care to patients but also in education and research. Estimates of the cost to bring these two hospitals up to current standards were arrived at through discussions with their administrators. The estimate for modernizing the facilities of the University of Illinois Hospital is \$25,000,000. Here, too, the possibility of replacement rather than modernization as the wisest and most economical use of funds should be considered. Cook County Hospital and University of Illinois Hospital are included on the assumption that the needs of these institutions must be met as a matter of public interest."

The survey which led to these conclusions was conducted more than five years ago.

The shortcomings of the Hospital have become greatly magnified in the face of the new needs arising from the massive programs of educational expansion in the health fields outlined in the preceding pages. The greater part of the present Hospital needs to be replaced by new patient-care facilities, along with modernization of some of it for hospital purposes. Some of the released space can be remodeled for nonhospital uses, and some of it is so obsolete that it should be demolished.

In planning new and remodeled hospital facilities, special consideration must be given to an important change in the mission of the University of Illinois Hospital. Whereas it has always admitted large numbers of economically disadvantaged patients from its surrounding neighborhood and from other areas of Chicago, its traditional role of a "research and educational hospital" has dictated a policy of selectivity under which faculty and student needs had priority. This policy has now been abandoned in favor of the role of a

"community hospital," with emphasis in clinical training upon community-health problems.

The development and operation of community clinics will be of special importance in this expanded mission of the Hospital. The University's present commitment to the Valley Outpost Clinic, and ongoing discussions with community groups both to the east and the west, will inevitably result in future commitments of a substantial portion of the University Hospital's beds, laboratories, X-ray facilities, and other services for the provision of high-quality patient care for several community health centers -- patterned after the operation which is presently bringing comprehensive health-care services to the residents of the "Valley" area.

A plan for widening the University of Illinois Hospital's community-health responsibilities has been recommended to the University in a study completed by Lester Gorsline Associates. Among other recommendations, one stated that planning should be initiated with the governing board of Cook County Hospital looking toward the merging of that institution with the University Hospital, and the ultimate construction of a combined hospital with 1,500 beds, including the full range of supportive ambulatory, laboratory, and special facilities adequate to meet the needs of an area population of 320,000 patients for health care of high quality. The Gorsline recommendation went on to suggest that initial construction of the clinical facility should provide space for approximately 500 beds to serve teaching, community-care, and research needs and to include all required outpatient and hospital-support facilities. Further, it was proposed that this initial unit be planned in close physical relationship to existing facilities and with reference to the

final design of the total complex. The report gave full recognition to the problem of determining the most effective reuse of existing space within the hospital complex, with particular reference to the need for improving facilities for ambulatory care.

Recent events affecting Cook County Hospital have made it necessary to reconsider the possibility of merging the institutional interests of the two hospitals. Although there has been no official response to the University's recent offer to assume interim operational responsibilities for Cook County Hospital -- with the eventual possibility of the kind of merger proposed in the Gorsline report -- recent actions of the governing commission indicate that they are moving in the direction of operating that institution themselves. In the light of this probability, the University wishes to move ahead with the planning to meet its future hospital and clinic-facility needs without further delay. A new 500-bed unit would be planned in design and location so that, with little additional expenditure, it could become the first phase of a combined unit with Cook County Hospital -- as envisioned in the Gorsline recommendations. But if the merger never does materialize, the 500-bed facility could continue to serve as the University's central focus for its clinical programs in the health fields in the Chicago metropolitan area and for its state-wide programs of continuing education.

VI. THE CHICAGO CIRCLE CAMPUS

The University's Chicago Undergraduate Division moved from Navy Pier in February 1965 to become the University of Illinois at Chicago Circle. The preceding fall-term enrollment was 5,214 freshmen and sophomores. Five years later, the number of students had reached 16,234; and there were five colleges granting baccalaureate degrees, a graduate college, and a graduate school of social work. For the year ending with the June 1970 commencement, 2,456 bachelor's degrees, 129 master's degrees, and 2 doctoral degrees were awarded. Graduate study was inaugurated in the fall of 1968; the Chicago Circle campus now has seventeen master's programs and eight leading to the Ph.D. degree.

This record of educational development has few, if any, parallels in the history of higher education. Together with other significant measures of institutional growth -- faculty, library, classrooms, laboratories -- it symbolizes the forward momentum of a new campus dedicated to the basic educational values of the land-grant movement and determined to find creative expression for them in the complex and turbulent urban environment of the 1970's.

One of the University's basic planning assumptions was declared earlier to be that the Chicago Circle campus should be expanded as rapidly as possible into a comprehensive urban university. It is primarily this fundamental premise that the University seeks to have the Board of Higher Education endorse in principle as an integral part of Master Plan - Phase III. It rests on the firm belief that the people of the Chicago metropolitan area need and deserve to have a public university of high quality that will provide a broad spectrum of educational opportunities -- undergraduate, graduate, and professional -- to a great variety of urban students who through choice or necessity

wish to commute to an institution of higher education. The great majority of them would be unable to seek such opportunities away from home, including a substantial number of intellectually able but economically disadvantaged youth.

In addition to meeting the needs of individual students for higher education as a means to self-fulfillment and productive careers, a public university like the University of Illinois at Chicago Circle will enable an urban society to make the kinds of investment in its human resources that are necessary to its viability and to its capability for self-improvement.

In addition, only this kind of university, as pointed out earlier, will have the varied scholarly and technical resources required to assist a large urban community in its efforts to solve its critical problems.

Although the development plan presented in the following pages will show detailed enrollment projections, varied new organizational arrangements, and many new programs, these specific parameters of growth and the associated calendar are secondary to this fundamental issue of educational and public policy: Will the responsible agencies of State government support the University of Illinois' efforts to give the nation's second-largest metropolitan area the kind of public university it needs and which its contribution to the State's welfare clearly justifies?

Enrollment Growth

The headcount enrollment at the Chicago Circle campus in the fall of 1969 was 16,234. As the figures on the following page in Table XIX show, enrollment is projected to increase in fairly equal annual increments to a total of 30,500 by the fall of 1980. The average increase per year over that period would be 1,297 students. (For the period from 1971-72 to 1980-81, the average annual increase would be 1,267 students.) By contrast, the enrollment gain from 1964-65 (at Navy Pier) to 1969-70 was at the much higher annual rate of 2,204 students per year. Most of the gains during that period, however, were at the undergraduate level; whereas during the coming decade, an increasing proportion of the increases will be in graduate and professional students.

Distribution of enrollment by educational level. The figures in Table XIX show that the Chicago Circle campus, like that at Urbana-Champaign, is planning a progressive shift in the distribution of enrollment towards upper-division and graduate-professional levels. Lower-division enrollment will increase at a very slow rate from 8,338 to 9,500 students in 1980-81 -- about 100 students per year. At the upper division, the 1969 figure of 6,998 will increase to 14,200 by 1980-81 -- slightly more than 100 per cent. The marked disparity between the growth rates and the 1980-81 totals of the two undergraduate levels arises from the assumption that undergraduate enrollment priority at Chicago Circle should go to junior-college transfers.

It is at the graduate-professional levels that the percentage increases are highest, which is not surprising in view of the very small number enrolled at these levels in 1969-70. Numerically, however, the increases at the two postbaccalaureate levels are less than those for the two undergraduate levels.

TABLE XIX

ENROLLMENT DISTRIBUTION FOR THE CHICAGO CIRCLE CAMPUS
BY LEVEL -- 1969-70 TO 1980-81^a

Fall Term	Lower Division	Upper Division	Graduate I- Professional	Graduate II	Total
<u>1969</u>					
Number	8,338	6,998	570	328	16,234
Per cent	51.36%	43.11%	3.51%	2.02%	100.00%
<u>1971</u>					
Number	8,600	8,900	1,025	575	19,100
Per cent	45.03%	46.60%	5.36%	3.01%	100.00%
<u>1972</u>					
Number	8,700	9,700	1,375	825	20,600
Per cent	42.23%	47.09%	6.67%	4.01%	100.00%
<u>1973</u>					
Number	8,800	10,400	1,675	1,075	21,950
Per cent	40.09%	47.38%	7.63%	4.90%	100.00%
<u>1974</u>					
Number	8,900	11,100	1,950	1,350	23,300
Per cent	38.20%	47.64%	8.37%	5.79%	100.00%
<u>1975</u>					
Number	9,000	11,700	2,200	1,600	24,500
Per cent	36.73%	47.76%	8.98%	6.53%	100.00%
<u>1980</u>					
Number	9,500	14,200	3,700	3,100	30,500
Per cent	31.15%	46.56%	12.13%	10.16%	100.00%

^aActual enrollment (headcount) for 1969-70; projections for 1971-72 and later years.

In terms of the average annual gain from 1969-70 to 1980-81, the undergraduate increase (both levels) is 760 students per year; the corresponding figure for the combined graduate levels is 537 students. The figures below summarize the comparisons of the increases by level for these two periods: 1964-65 to 1969-70, and 1971-72 to 1980-81.

		<u>Undergraduate (Both Levels)</u>	<u>Graduate I, II- Professional</u>	<u>Total</u>
1964-65		5,214	0	5,214
1969-70		<u>15,336</u>	<u>898</u>	<u>16,234</u>
Increase:	Number	10,122		11,020
	Per cent	194.13%		211.35%
	Per year	2,024		2,204
1971-72		17,500	1,600	19,100
1980-81		<u>23,700</u>	<u>6,800</u>	<u>30,500</u>
Increase:	Number	6,200	5,200	11,400
	Per cent	35.42%	325.00%	59.68%
	Per year	689	578	1,267

It might seem questionable whether an annual increase of 578 graduate students per year is likely to be realized at the Chicago Circle campus between 1971-72 and 1980-81. The answer to this question is that the projections do not seem a priori to be unreasonable in the light of the growth of undergraduate enrollment projected for the 1970's, the proportion of undergraduates expected to seek more advanced training, and the undoubted needs of the Chicago area for educated manpower. Furthermore, an increasing proportion of these students will be enrolled in programs leading to professional and technical employment in the urban community. Another consideration is that the private universities of the Chicago area probably will not expand enrollment at these advanced levels, due partly to the cost and partly to institutional policy.

Distribution of graduate-professional enrollment by broad areas of

study. The percentages of graduate-professional students enrolled in the eleven broad areas of study previously described -- for Graduate I-Professional and Graduate II levels -- are shown in Table XX (p. 116) for 1969-70 and 1980-81. The figures for 1969-70, however, are not significant as indicators of educational policy judgments concerning the relative importance of these fields -- for the reason that graduate study was initiated at the Chicago Circle campus only the year before; and both the number of fields and the number of students in 1969-70 are too small to be reliable.

The percentage distributions for 1980-81, however, may be assumed to be more stable reflections of the comparative priority among these various categories of instruction to be expected at the Chicago Circle campus. More than half the students at Graduate I-Professional level and almost half of those at Graduate II level are predicted to be in the last three categories of Table XX, i.e., in the social sciences, the applied social sciences and professions, and special interdisciplinary programs (which, at Chicago Circle, means the proposed College of Urban Sciences). These values are considerably higher than those shown in Table XII (p. 70) for the Urbana-Champaign campus. Caution should be used in making comparisons between these two campuses, however, partly because at Chicago Circle the graduate program is a developing one, and the proportion of graduate-professional students enrolled in a given field will naturally vary with the age of the program. Enrollments will be low for curricula that have been only recently introduced, but not necessarily as a reflection of a priority judgment as to the comparative importance of the field.

The remainder of this chapter will be devoted to discussions of

(a) plans for the improvement of undergraduate education, and (b) new graduate

TABLE XX

CHICAGO CIRCLE CAMPUS: DISTRIBUTION OF GRADUATE AND
PROFESSIONAL ENROLLMENTS BY BROAD AREAS OF STUDY -- 1969-70 AND 1980-81

Educational Levels and Areas of Study	1969-70		1980-81	
	Number	Per Cent	Number	Per Cent
<u>Graduate I-Professional</u>				
Total Enrollment	<u>570</u>	<u>100.00%</u>	<u>3,700</u>	<u>100.00%</u>
I. Humanities and communications	95	16.67%	415	11.22%
II. Arts and environmental design	--	--	267	7.22%
III. Biological sciences	49	8.60%	143	3.86%
IV. Agricultural sciences	--	--	--	--
V. Health professions	--	--	--	--
VI. Mathematical sciences	53	9.30%	225	6.08%
VII. Physical sciences	51	8.95%	215	5.81%
VIII. Engineering	55	9.65%	400	10.81%
IX. Social sciences	137	24.03%	624	16.86%
X. Applied social sciences and professions	130	22.80%	946	25.57%
XI. Special interdisciplinary programs	--	--	465	12.57%
<u>Graduate II</u>				
Total Enrollment	<u>328</u>	<u>100.00%</u>	<u>3,100</u>	<u>100.00%</u>
I. Humanities and communications	25	7.62%	265	8.55%
II. Arts and environmental design	--	--	141	4.55%
III. Biological sciences	22	6.71%	231	7.45%
IV. Agricultural sciences	--	--	--	--
V. Health professions	--	--	--	--
VI. Mathematical sciences	46	14.02%	209	6.74%
VII. Physical sciences	57	17.38%	345	11.13%
VIII. Engineering	29	8.84%	484	15.61%
IX. Social sciences	58	17.68%	540	17.42%
X. Applied social sciences and professions	91	27.75%	600	19.35%
XI. Special interdisciplinary programs	--	--	285	9.20%

and professional programs being planned for the Chicago Circle campus during the coming decade. Most of the new programs will be at graduate-professional levels for two reasons: (a) all of the existing departments now have undergraduate degree programs, and relatively few new departments are being planned; (b) the majority of departments have no doctoral programs, and many offer no graduate work at all. New colleges and schools will be organized to accommodate a substantial portion of the increased graduate enrollment described above; and curricula leading to new graduate degrees in existing fields of study will share in the increase. The orientation of these new units and programs will be heavily towards the special problems and needs of urban society and its environment.

Undergraduate Education

The massive increase in undergraduate enrollment of 10,122 students at the Chicago Circle campus from 1964-65 to 1969-70 is a direct measure of the extent of its preoccupation with undergraduate education. New colleges, departments, and baccalaureate-degree programs have had to be established and put into operation on an unprecedented scale and at an extraordinary rate. In certain respects, the rate of development has been far too rapid, placing unusually heavy burdens upon faculty members and administrative officers at all levels. But the accelerated pace seemed justified by the acute need to close the gap that had long existed in the Chicago area in public higher education: the complete lack of undergraduate degree programs in a public institution -- except for the curricula in teacher education offered by the two teachers colleges operated by the Board of Education of the City of Chicago, and the baccalaureate-professional programs at the University's Medical Center campus.

Now that the emergency needs of the past five years have been met -- and considering the transformation of the two teachers colleges into State colleges with broadened instructional responsibilities -- it has become possible for the Chicago Circle campus to devote more time and greater effort to improvement of the quality of its undergraduate education. As already noted in Chapter III, this means that a systematic program directed towards this goal will be organized, to be concerned with all aspects of undergraduate education: student needs, faculty, curricula, teaching methods, and special instructional resources. New organizational arrangements will be devised as needed, including a campus-wide officer and a committee concerned with overall planning, coordination, and evaluation of undergraduate education. Students, faculty members, and

administrative officers will be involved at all levels of concern with this problem.

In referring to plans for the future, it is important to emphasize the substantial progress that has been made at Chicago Circle during the past five years in the development of undergraduate programs of high quality. In the first place, a far higher proportion of the teaching staff are regular faculty members than is true generally in large universities -- partly a reflection of the small graduate program and the lack of even enough teaching assistants to perform the functions for which ideally they should be available. A major problem and an opportunity confronting the campus as graduate study expands will be to develop innovative ways of involving graduate assistants in freshman-sophomore instruction so as to give them productive teaching experience and to give the faculty badly needed assistance -- and while achieving these objectives to enrich the educational experience of the students.

Other notable undergraduate developments in recent years at Chicago Circle include: (a) an Office of Instructional Resources which provides a great variety of technical assistance and equipment to individual faculty members; (b) an Honors Program for exceptionally able students; (c) an innovative "Educational Assistance Program" for the benefit of students coming from educationally deprived backgrounds. All of these activities will be continued and improved.

New Programs Leading to the Ph.D. Degree

Doctoral programs have been established in the following eight fields at the Chicago Circle campus: chemistry, engineering, history, mathematics, philosophy, physics, psychology, and sociology. A revised proposal for a doctoral program in biology has been submitted to the Board of Higher Education, but action on it has been deferred pending the completion of Master Plan - Phase III.

The enrollment projections shown in Tables XIX and XX presuppose that additional programs for the Ph.D. degree will be established by 1980 in most of the fundamental fields of learning, and in a few interdisciplinary fields. The timing and the enrollment levels for the various new programs are necessarily tentative in nature, and some of them may not materialize on schedule. Furthermore, with the development of the new teaching degree of Doctor of Arts, a substantial number of students projected statistically for programs leading to the Ph.D. degree can be expected to seek the new D.Arts degree. As regards the latter, the University assumes generally that it would be offered only by departments having curricula leading to the Ph.D. degree. (This program will be discussed further in a later section.)

A classification of fields of study in which work for the Ph.D. degree is being planned is presented on the following page -- with the tentative dates for initiation indicated in parentheses. (The classification is that used in Table XX.) Within each category, the disciplines are listed in alphabetical order, but the proposed initiation dates constitute something of a priority order for the list as a whole.

Humanities and communications

English (1972-73)
French (1975-76)
German (1972-73)
Linguistics (1974-75)
Russian (1976-77)
Spanish (1976-77)
Speech (1975-76)

Arts and environmental design

History of architecture and art
(1975-76)

Biological sciences

Biology (1971-72)

Mathematical sciences

Computer sciences (1975-76)

Physical sciences

Geological sciences (1972-73)

Engineering

Bioengineering (1972-73)
Information engineering (1971-72)
Systems engineering (1973-74)

Social sciences

Anthropology (1973-74)
Economics (1972-73)
Geography (1973-74)
Political science (1972-73)

Special interdisciplinary programs

Administrative science (1976-77)

Humanities and communications. The doctoral programs proposed in these fields would train students primarily for careers in college teaching, and some question has been raised recently concerning the demand for doctoral graduates with the Ph.D. degree in the humanities. On this point, Folger et al.³³ have the following comment, after reviewing the supply-demand situation for the humanities:

"In summary, in the next two decades the demand for Ph.D.'s in the humanities as college teachers will be sufficient to absorb the total supply. At the M.A. level, the demand is already smaller than the supply and will probably decline in the next decade. Since humanities graduates can find employment in related fields, the real problem is not unemployment, but graduate programs that will better prepare students to utilize their talents in a wider spectrum of occupations" (p. 65).

³³ John K. Folger, Helen S. Astin, and Alan E. Bayer, Human Resources and Higher Education. Staff Report of the Commission on Human Resources and Advanced Education. Russell Sage Foundation, 1970.

A major reason given for the conclusion that holders of the Ph.D. degree in the humanities will continue to find employment throughout the 1970's and beyond lies in the fact that only about 37 per cent of present college faculty members teaching in the humanities hold the Ph.D. degree, and in the assumption that this percentage would (and should) rise as the supply increases -- "reaching 50 to 52 per cent by 1980 and 58 to 62 per cent by 1985" (Folger, et al., op. cit., p. 64).

Three other considerations should be emphasized here in support of the proposed expansion of doctoral education into additional disciplines among the humanities. First, the University of Illinois at Chicago Circle cannot become a well-rounded university without the advanced learning and scholarship that would be represented by a faculty in the humanities giving doctoral instruction. Second, able college graduates in the Chicago area should have the opportunity to continue their education in the humanities in a public university, since otherwise many of them could not afford the cost of graduate study. This is particularly true in a period like the present, when financial aid for graduate students (fellowships, teaching and research assistantships, and loans) appears to be decidedly less available than in recent years. Third, graduates with the Doctor of Arts degree are needed for teaching in four-year colleges and junior colleges in order to upgrade instruction -- a need that will grow in significance as the junior colleges absorb an increasing proportion of freshmen and sophomores who will later transfer to senior colleges; and the scholarly environment and standards suitable for the D.Arts degree require the kind of faculty, library, and other resources that are associated with a Ph.D. program. In fact, the D.Arts program is regarded by the University of Illinois as being

essentially an alternate pattern of doctoral education, not as an inferior scholarly undertaking.

Arts and environmental design (history of architecture and art).

A doctoral program in the history of architecture and art is proposed as the only program for the Ph.D. degree to be offered by the College of Architecture and Art. An existing department of that College would be responsible for the program, which would constitute an important addition to the broad offerings in the field of the humanities. The faculty and other resources assembled for this program would support the work to be offered in the new College of Creative Arts (see below). This doctoral program is needed also to help lend scholarly balance to the graduate offerings of the Chicago Circle campus, as well as to provide the opportunity for advanced study to able college graduates in the area who otherwise could not secure such training.

Biological sciences (biology). With doctoral programs already available in chemistry and in physics, the addition of the Ph.D. degree in biology has very high priority in the development plan for the Chicago Circle campus -- in order to complete the cluster of basic natural sciences that is most essential for supplying college teachers of science, and for the support of interdisciplinary and applied fields. Applied studies related to the quality of the environment and also those concerned with health, for example, are fundamentally dependent upon basic biological science for instructional and research support. Furthermore, individuals trained in several branches of biological science are needed outside universities in applied research agencies concerned with environmental problems and with the health fields.

As regards the demand for teachers, Folger et al.³⁴ note that the percentage of doctorates on faculties of senior colleges and universities in the biological sciences will fall from 75 in 1962-63 to about 68 to 70 in 1970 and then "will rise to about 90 by 1975." This is said to represent a saturation point; but these authors excluded junior-college positions from their estimates of supply and demand for college teachers. A substantial need exists in junior colleges for holders of the Doctor of Arts degree in the biological sciences.

Mathematical sciences (computer sciences). It hardly needs to be emphasized that advanced education in computer sciences has become an essential program in a major university. Although such training can be secured either in departments of mathematics or in colleges of engineering, this genuinely interdisciplinary field has earned its right to independence, and is so important to so many fields of scientific and professional activity that a separate department and program for the Ph.D. degree seems highly justified.

Physical sciences (geological sciences). A doctoral program in geological sciences would be the third and final physical science to be proposed for the doctorate during the period of this development plan. In addition to the training of teachers of earth sciences, geologists are needed for various types of applied studies of urban problems, including the properties of the earth related to massive urban structures and the water level and other "oceanographic" aspects of the Great Lakes.

Engineering. The three doctoral degrees proposed for the College of Engineering -- bioengineering, information engineering, and systems engineering --

³⁴ John K. Folger, Helen S. Astin, and Alan E. Bayer, op. cit. (p. 68).

all have very high priority in the evolving graduate program of an urban university. The program in bioengineering would be conducted jointly with the College of Medicine at the Medical Center campus, and would greatly strengthen the University's work in the health sciences and professions.

The proposed doctorate in information engineering would provide advanced training in a wide range of interrelated areas including circuit theory, communication theory, solid-state electronics, automatic control theory, and the application of information engineering to mass education, to ecological and environmental problems, and to organized information retrieval from components of an urban system. The program is essential if the College of Engineering at Chicago Circle is to develop the capability for responding adequately to the needs of its urban environment.

The Ph.D. degree in systems engineering would perhaps be the one most directly relevant to the complex public-service needs of a large metropolitan area. The program would provide training in the applications of the basic theory of systems to the engineering problems involved in transportation systems, sanitation, water supply, housing, air and water pollution, and noise control.

Social sciences. The four social sciences listed above -- anthropology, economics, geography, and political science -- have as a group the very highest priority for doctoral development at the Chicago Circle campus. They are fundamental to many aspects of investigation of urban institutions and the dynamics of urban society; and they are essential as basic disciplines underlying much of the work to be done by the proposed College of Urban Sciences. The latter, as will be seen below, will not offer the Ph.D. degree initially, but will instead concentrate upon innovative undergraduate instruction,

professional degrees, applied research, and public service. Such a multi-disciplinary enterprise would be on very insecure grounds if conducted in the absence of doctoral-level instruction and research in the basic social-science disciplines. Hence, programs for the Ph.D. degree should be initiated in all four of these fields at the earliest possible moment.

Special interdisciplinary programs (administrative science). The suggested program for the Ph.D. degree in administrative science will be discussed below in connection with the new Graduate School of Administration. In addition to its role in professional education and applied studies, that School would offer rigorous research training in administrative science. The curriculum would draw heavily upon the social sciences, mathematics and computer science, engineering, and business.

The Degree of Doctor of Arts

The new degree of Doctor of Arts has already been discussed, particularly with reference to the University's initial program for this degree at the Urbana-Champaign campus (D.Arts in economics). Extensive discussion and planning are now under way for the establishment of several such curricula at the Chicago Circle campus under the leadership of the Graduate College. Nine degree programs are under consideration by departments in the College of Liberal Arts and Sciences -- the purpose being primarily to train teachers for junior colleges and four-year colleges. But there should also be increasing demand for the graduates of these programs in universities -- partly as a means to improving the quality of freshman-sophomore education in institutions that have been forced to rely too heavily upon graduate teaching assistants for instruction in introductory courses. With some easing of the shortage of regular faculty members, and with creative scholarship germane to teaching expected to receive growing encouragement, the new "teaching degree" should become a strong competitor with the Ph.D. degree during the 1970's.

Much of the curricular content for this degree will be similar to that covered by the candidate for the Ph.D. degree. The principal difference will be the omission of the research dissertation required for the latter and the substitution of other forms of scholarly study -- including teaching methodology, laboratory training in the use of a variety of teaching aids (tapes, films, videotapes, computer-aided systems), and a teaching internship.

The following are the fields in which programs for the degree of Doctor of Arts are being planned, with the initiation dates in parentheses:

Chemistry (1972-73)
Earth sciences (1972-73)
English (1973-74)
French (1976-77)
German (1973-74)

Mathematics (1972-73)
Physics (1973-74)
Russian (1976-77)
Spanish (1976-77)

Graduate Degrees in Existing Professional Colleges

Master's degrees. It will be assumed that in principle the offering of curricula leading to M.A. or M.S. degrees would be appropriate and desirable for each of the four existing professional colleges -- contingent upon conformity to acceptable standards of academic quality and the availability of resources. That is to say, these colleges should normally be expected to offer the kinds of opportunities for study at the master's level that might be suitable for such departments in a major university. Any other assumption would seem to imply irresponsible approval of the waste of resources already available at an institution such as the University of Illinois at Chicago Circle -- library materials, computer facilities, and supporting departments in the fundamental disciplines.

In addition to these general master's-degree programs -- typically requiring one year of academic work and constituting a kind of continuation of specialized baccalaureate study at a more advanced level -- such professional fields as architecture, business administration, education, and engineering need to have specialized professional training at the master's level. The following is a list of such degree programs proposed at this time for development at the Chicago Circle campus, with their initiation dates:

College of Business Administration	M.B.A. (Master of Business Administration, 1971-72)
College of Architecture and Art	M.Arch (Master of Architecture, with several program options, 1971-72 and later)
College of Engineering	Master of Social Systems Engineering (an interdisciplinary degree to be offered in cooperation with several social science departments, 1972-73)

The degree Master of Business Administration (M.B.A.) is the only one of these three that has thus far been submitted to the Board of Higher Education. The Board's staff has indicated its intention to recommend disapproval of this proposal -- mainly on the ground that a new M.B.A. program is not needed in the Chicago area.

The University wishes to comment briefly here on this position; a further statement on the issue is in preparation, which will include comments on the report of Master Plan Committee W - Business (whose recommendations essentially coincide with the Board staff's position).

As a basis for comment on the issues of public policy raised by the negative attitude towards the Chicago Circle M.B.A. program, figures on the development plan for that campus' College of Business Administration are presented in Table XXI (p. 130).

In evaluating the University's request, it is important to consider the size of the Chicago Circle campus' M.B.A. program -- especially in relation to the estimated enrollment level of 5,200 students in six private institutions during the past year. As seen in Table XXI, the College of Business Administration has projected the following total enrollments for its M.B.A. program: 1971-72 (initial year), 116 students (2.2 per cent of the present total of 5,200); 1975-76, 234 students (4.5 per cent of 5,200); 1980-81, 386 students (7.4 per cent of 5,200). The percentage values for 1975-76 and 1980-81 are overestimates of actually expected percentages, since in calculating them no allowance was made for general enrollment increases which would produce a higher total for the Chicago area seeking M.B.A. degrees in the later years. But the main point to be made about the College's projections is that they would represent only a small fraction of the city-wide total -- probably

TABLE XXI

ENROLLMENT PROJECTIONS FOR THE COLLEGE OF BUSINESS ADMINISTRATION
CHICAGO CIRCLE CAMPUS

	1969-70	1971-72	1975-76	1980-81
<u>Business</u>				
Lower Division	736	774	810	845
Upper Division	891	1,127	1,469	1,797
Graduate I		88	165	236
Graduate II		28	69	150
Total	(1,627)	(2,017)	(2,513)	(3,028)
<u>Economics</u>				
Lower Division	84	86	90	98
Upper Division	102	138	176	208
Graduate I		26	45	75
Graduate II			20	60
Total	(186)	(250)	(331)	(441)
<u>Total</u>				
Lower Division	820	860	900	943
Upper Division	993	1,265	1,645	2,005
Graduate I		114	210	311
Graduate II		<u>28</u>	<u>89</u>	<u>210</u>
<u>Grand Total</u>	1,813	2,267	2,844	3,469

considerably less than the normal enrollment increase during the 1970's. Even if the University's enrollment levels were doubled, they would constitute no threat to existing programs.

With respect to the comparative costs of establishing a University program and expanding enrollment in private universities, it is by no means clear that the latter route would be less expensive. Certain of the University's significant indirect costs of such an instructional curriculum would already have been met (supporting departments, library, computer facilities, and other services). Failure to utilize these resources would constitute an important element of real cost to the State and loss to needy students of the area. Furthermore, serious damage to the morale of a large faculty would inevitably result from such a ban on the offering of a program that is virtually routine in colleges of business. These adverse effects of such a policy would damage the State and the City of Chicago far more than would be gained in alleged "savings" from perpetuation of the monopoly now held on this field by private higher education in Chicago.

Aside from these considerations, the fundamental issue remains simply this: Is the University of Illinois at Chicago Circle going to be allowed by the Board of Higher Education to expand its programs in the standard fields of graduate and professional education that a major public university should be expected to offer to the people of the Chicago metropolitan area? Or will the Board decide this important issue of educational and general public policy on the basis of the invalid assumption that crippling the development of the University of Illinois at Chicago Circle will somehow be "economical" for the State and also make a material contribution towards solving the financial problems of the private universities of Chicago?

Professional doctorates. The Colleges of Education and Engineering and the Jane Addams Graduate School of Social Work propose to develop professional doctoral programs during the 1970's. These degrees would be granted to individuals preparing for professional careers in their respective fields, at high administrative or technical levels; and the graduates would be concerned directly with critical social problems and important public services.

The College of Education proposes to establish the D.Ed. degree in 1972-73, with specialization in educational policy studies. Further curricular development would include: curriculum design and evaluation (1973-74); school psychology (1974-75); early childhood education (1975-76). With the College's strong emphasis upon urban education, and in the light of the acute need for educational improvement in the education of the disadvantaged, there is strong justification for these three professional programs. Among other benefits, the graduate students and the faculty in these programs would lend support to the special research program in urban education already established in the College.

A program for the degree of Doctor of Engineering for Public Affairs would be conducted jointly by the College of Engineering, the Departments of Political Science and Sociology, and the new Graduate School of Administration. The purpose of the program would be to train a highly selective group of individuals concerned with public affairs to understand both the advanced aspects of engineering technology and the concepts and methodology of the relevant social sciences. The training program would include an internship with political leaders and administrators (both in the area of technology and in the area of social-political organizations). The traditional doctoral thesis would be replaced by a practical project in which the student would formulate a strategy

for innovative solution to a particular social problem by attempting to utilize appropriate components of technology.

The degree of Doctor of Social Work is being planned by the Jane Addams Graduate School of Social Work for introduction in 1973-74. By that time, the School will have a total enrollment of 305 students in the professional program for the master's degree, and the doctorate in social work should be well under way at the Urbana-Champaign campus. The general purpose of the professional doctorate in social work will be to train a selected number of individuals for leadership roles in social-welfare administration and in applied research directed towards improving the effectiveness of public-aid systems. Training in systems analysis as applied to the delivery of social-welfare services would be a particular facet of this program. Students would also be trained in the study of the relationships between the social-welfare system and other systems of public services (such as health, education, employment).

College of Urban Sciences

The Board of Trustees in May 1970 approved a proposal for the establishment of a College of Urban Sciences at the Chicago Circle campus. This College would provide a multidisciplinary focus for professional education and applied research directed towards the major problems of modern urban society. This proposal reflects agreement with recommendations made in two recent national committee reports concerning changes in university organization deemed necessary to achieve an effective "problem-centered" orientation and mobilization of multidisciplinary resources towards pressing societal concerns.^{35,36} The following is a description of the kind of new organization envisaged by one of these committees:

"The Committee recommends that universities consider the establishment of broadly based training and research programs in the form of a Graduate School of Applied Behavioral Science (or some local equivalent) under administrative arrangements that lie outside the established disciplines. Such training and research should be multidisciplinary (going beyond the behavioral and social sciences as necessary), and the school should accept responsibility for contributing through its research both to a basic understanding of human relationships and behavior and to the solution of persistent social problems."³⁵

Instead of the types of departments customary in "discipline-oriented" colleges, the College of Urban Sciences probably will organize its faculty and students in terms of "task forces" or similar functional groups concerned with major classes of urban problems.

³⁵ National Academy of Sciences, The Behavioral and Social Sciences: Outlook and Needs. A report by the Behavioral and Social Sciences Survey Committee, under auspices of the Committee on Science and Public Policy, National Academy of Sciences, and the Social Science Research Council (p. 12).

³⁶ National Science Foundation, Knowledge Into Action: Improving the Nation's Use of the Social Sciences. Report of the Special Commission on the Social Sciences of the National Science Board, Washington, D. C., 1969 (p. xix).

Degree programs both at the undergraduate and the graduate levels will be offered; and in both cases the work will be closely related to the research and public-service programs of the College. Undergraduates would take courses in the social and behavioral sciences, and in other related fields, for a substantial portion of their curriculum during the first two years. During their junior and senior years, they would concentrate on the study of urban problems, which would include special courses and seminars, participation in community projects, and involvement in the research activities of one or more task forces.

Initially, a graduate program or programs would be offered leading to an M.A. or an M.S. degree in urban policy or in various specialized aspects of urban professional activity (such as urban planning). Graduate students in the College of Urban Sciences would take relevant supporting courses in other colleges; and students in these colleges, in turn, could enroll in courses in the College of Urban Sciences. Through joint appointments with other colleges, complementary and mutually supportive relationships would be cultivated so as to strengthen the University's total contribution to the attack upon urban problems.

It seems likely that a doctoral degree of a professional nature will be proposed during the next five to ten years by the College of Urban Sciences, but no specific planning will be done until after the curriculum for the master's degree has been established.

The present Center for Urban Studies would be transferred to the College of Urban Sciences -- to provide a specific focus for programmatic research, to facilitate the procurement of outside research support, and to encourage joint appointments for interested faculty members throughout the University.

College of Creative Arts

Recognizing the need for an innovative educational institution devoted to the creative arts in the Chicago area, the University of Illinois at Chicago Circle is planning to establish a College of Creative Arts which would incorporate work now offered in other colleges on the campus and would expand the program into new areas. The present provisional schedule calls for the opening of the College in 1975-76, with programs in theatre, dance, music, and media -- if outside support for the needed special facilities can be secured.

The physical plant of the College would include professional and student theatres, concert and recital halls, rehearsal rooms, technical shops, classrooms, offices, and library facilities. A prime element in the proposed college -- if non-State funding could be found for it -- would be a repertory theatre with a resident company.

In addition to the Bachelor of Arts degree now offered in certain of these fields, the College would offer the degree of Bachelor of Fine Arts in professional theatre training, dance, film-making, and allied areas -- as well as the degree of Bachelor of Music. For purposes of meeting teacher-certification requirements, the degree of Bachelor of Arts in education in the various departmental areas would be offered. Graduate study at the master's level would also be introduced, as soon as feasible after the establishment of the College. The M.A. degree would be offered in the various subject-matter fields, with emphasis upon the history and theory of the respective subjects. As a teacher-education degree, the degree of M.A. in the teaching of the various subjects would be offered as needed.

The College of Creative Arts would become one of the main instrumentalities through which the University of Illinois at Chicago Circle would interact with the Chicago metropolitan area. On the one hand, the programs and facilities of the College would be important cultural resources for the community. And, in turn, community artists and organizations would contribute to the instructional and general cultural programs of the University.

School of Criminal Justice

The Chicago Circle campus now offers a program in the administration of criminal justice leading to the baccalaureate degree. It is interdisciplinary in nature and located within the College of Liberal Arts and Sciences.

It seems probable that this program will be expanded into a "School of Criminal Justice," although no decision has yet been reached as to the timing of the reorganization or the administrative location of the School. Inasmuch as a heavy component of its work consists in courses in the social and behavioral sciences, it is possible that it would remain under the administrative jurisdiction of the College of Liberal Arts and Sciences. Alternatively, it could be located within the College of Urban Sciences.

Two graduate programs are being planned at the master's level: an M.A. degree in criminal justice and an M.S. degree in criminalistics. The latter will focus upon technical procedures in criminal investigation. It is possible that work for a professional doctorate in criminal justice would eventually be proposed -- after the graduate programs at the master's level had been well established.

The School of Criminal Justice would seek to involve scholars in various fields in research and related activities designed to lead to improved understanding of the social institutions concerned with law enforcement and the administration of criminal justice. As a professional school, its student body would consist primarily of individuals in training for careers as administrators in law-enforcement agencies and related institutions. Through its instructional programs and the research of its faculty members -- including joint appointees with other departments -- the School of Criminal Justice should become a leading center for advanced work in law enforcement.

Graduate School of Administration

The proposed Graduate School of Administration would be concerned with the basic methods and principles of administrative science, and with their application to a variety of professional fields such as public administration, business administration, educational administration, health-care administration, and administration in other social institutions and organizations. The School would thus be in part a service organization providing instruction and research training to students specializing in the various professional fields mentioned.

But, in addition, students concentrating in administrative science as such would be concerned with the theory of social organization, with decision-making and other aspects of administrative behavior, and with procedures for evaluating the effectiveness of operations in various types of organizations. The work of the School would be heavily multidisciplinary in nature -- involving the fields of mathematical statistics, computer science, business administration, engineering, and most of the social sciences. Certain aspects of the humanities would also be brought into the School's program, such as the communication arts and social philosophy.

It is planned at present to offer the Master of Arts in administration in 1974-75, and a doctorate in administration in 1977-78. The latter has been provisionally listed on p. 121 as the Ph.D. degree; but it might turn out to be a professional doctorate. The Graduate School of Administration might in fact develop a professional doctorate with various options according to the administrative field which the student planned to enter, including business administration, public administration, and hospital administration.

Graduate School of Library Science

It is proposed to establish a Graduate School of Library Science at the Chicago Circle campus in 1975-76, with the admission of candidates for the professional degree of M.S. in library science. There is a national shortage of well-trained librarians, and there are only three accredited library schools in Illinois -- two of them in Chicago and both in private universities.

The great expansion of higher education in recent years has not been paralleled by corresponding expansion in the professional education of librarians. There is definite need for an additional program in a public university in Chicago.

Other Professional Schools

Discussions have been held between administrative officers of the Chicago Circle and the Medical Center campuses that might lead to the establishment of a School of Basic Medical Sciences at the Chicago Circle campus -- parallel to the one being organized at the Urbana-Champaign campus as a unit within the College of Medicine. The School would offer the intensive first-year curriculum in medical sciences for students who would then transfer to one of the College of Medicine's clinical schools for the last three years of the M.D. curriculum. This plan will be studied further by the various faculty groups involved, and might well be approved in the near future.

No planning has been done at the Chicago Circle campus for degree programs in other professional fields, but brief note might be taken here of the report of Master Plan Committee U concerning legal education.³⁷ At present,

³⁷ Master Plan Committee U, Legal Education. A report to the Illinois Board of Higher Education, June 1969.

the only public law school in the State is in the University of Illinois at Urbana-Champaign, and the Committee recommends that top priority be given to the expansion of the College of Law there. Second priority is given to the establishment of a new law school at Southern Illinois University in Carbondale. No proposal is made for a public law school in Chicago. Furthermore, the report does not recognize any special need on the part of urban groups for the kinds of educational opportunities that such a school would provide. Able but economically disadvantaged students from inner-city areas would be an example of a group whose spokesmen have emphasized its underrepresentation in the law-enforcement and judicial systems.

The University of Illinois has no proposal to submit at this time for the establishment of a second law school in Chicago, but it does intend to keep the problem under study.

Off-Campus Education and Public Service

It will be the general policy of the Chicago Circle campus to conduct most of its "outreach" functions and relationships through the regular departments and colleges on the campus. The foregoing descriptions of new programs have suggested many avenues of interaction with the metropolitan community -- particularly through the projected functions of the College of Urban Sciences. But all of the professional colleges and schools will develop relationships with corresponding clienteles.

In line with the report entitled Extension and Public Service in the University of Illinois, prepared during 1967-68, the Chicago Circle campus has assigned to a vice chancellor responsibility for coordinating the outreach and public-service functions of the campus. To advise this officer, it is planned to organize a campus council on community programs, which would consist of the following members:

An associate dean from each of the colleges and schools

The Director of the Center for Urban Studies

The Director of the Office of Neighborhood Relations

A representative of the Division of University
Extension (a University-wide unit)

A representative of the Cooperative Extension Service
of the College of Agriculture (which has a substantial
extension program in Cook County)

The only present plan for off-campus instruction is a proposal being explored by the College of Engineering for offering graduate work towards engineering degrees through a microwave TV system with a two-way capability for communicating with classrooms established in industrial plants, municipal departments, and possibly other educational institutions. This so-called

"GENESYS System" would link the regular graduate classes in the College of Engineering to the classrooms established in the various off-campus locations, with full credit being granted towards graduate degrees for individuals admitted to the Graduate College. This system has been developed mainly at Stanford University and tried out in other institutions, and it shows great promise for relatively economical extension of educational opportunity to engineers and technical personnel in industrial and other off-campus locations.

Although it does not fall within the definition of "off-campus" education, the Chicago Circle campus is also exploring the possibilities for extending its regular instructional programs into the late afternoons and evening hours -- partly for the benefit of adults who would have difficulty attending regular daytime classes. This will be done on a selective basis and after consultation with other institutions in the Chicago area offering similar work. There is no intention to organize a massive "night-school" program, and particularly not to offer a miscellany of courses not directed towards academic degrees. Any programs offered by the University outside the present schedule would be conducted by the regular departments, schools, and colleges, and would primarily represent expanded utilization of the existing plant in the evening and on Saturday.

VII. GENERAL UNIVERSITY PROGRAMS

The discussion of the University's development plan thus far has been concerned with programs that are administered at one or another of the three campuses. Although these activities have sometimes involved intercampus cooperation -- as in the field of medical education -- in such instances one of the campuses has had primary administrative responsibility. But the University of Illinois system provides for the administration of certain types of instructional, research, and public-service activities as "general University programs" -- to be conducted when the interests and resources of more than one campus are needed or when other conditions require University-wide direction of an undertaking. The officers in charge of such programs report to the President (or to other central officers whom he might designate) rather than to a chancellor at one of the campuses.

The purpose of this final chapter is to outline the aspects of the University's development plan for the 1970's that are administered on a University-wide basis. The beneficiaries of these programs usually are individuals, groups, or organizations located off campus. Hence, the generic term "public service" will be used to designate these activities -- as well as the counterpart programs conducted at campus level. Two broad classes of such functions may be distinguished: (a) continuing education -- in the form of extramural courses (with or without credit towards a degree), correspondence courses, short courses and conferences, and technical-training programs; (b) professional-technical services of a problem-solving nature -- including consulting, policy studies, applied research, innovative development, and evaluation.

Inasmuch as the University's overall program of public service is dependent upon both general University and campus programs -- and especially upon the effectiveness of the interaction between the two administrative levels -- it will be useful to discuss first a new organizational structure for public-service activities that is in process of implementation.

A New Organizational Structure for Public Service

A reference was made on p. 2 to a study of the University's extension and public-service programs carried out during 1967-68 by Vice President Eldon L. Johnson, under the aegis of the University Council on Extension and Public Service. The study's first report presented a survey and evaluation of existing programs, while the second report (with Professor David Lazarus as collaborator) was devoted to proposed changes in University policies and in organizational arrangements.

The Johnson-Lazarus report recommended essentially the creation of administrative offices at two levels responsible for planning, coordination, and general direction of public-service activities: at campus level, a central administrative officer under the Chancellor; at general University level, a vice president for public service who would report directly to the President.

Campus organization. A vice chancellor or associate chancellor at each of the three campuses will be appointed with campus-wide responsibility for general administrative supervision over all aspects of the public-service programs of the campus. He will act as the Chancellor's deputy in these matters, with the advice of a faculty committee. This committee would be concerned primarily with matters of general educational policy involving public service. In addition, the chief campus officer for public service

will have a consultative body composed of representatives from each of the major units on the campus conducting public-service programs. Presumably, these representatives would either be the heads of the campus agencies or members with assigned responsibilities for representing their units in the campus public-service system.

The campuses are now in the process of selecting these officers, and at one campus the choice has already been made.

General University organization. The proposal for the appointment of a vice president for public service has been approved by the President, and it is expected that an appointment will be announced during the coming year. This officer would act as deputy to the President in all public-service matters requiring the latter's attention either at general University or at campus level. In the case of general University programs, the Vice President for Public Service would have line responsibility and authority to act for the President on proposals and problems related to these units. He would act in a staff relationship under the President relative to campus programs and campus proposals brought to the attention of the President by the chancellors. But, in addition, he would have functional responsibility for the direction of planning, coordination, and evaluation of public-service activities throughout the University system. In this role, the Vice President for Public Service would maintain close and continuing relationships with the campus officers and programs.

A University committee for public service will be established as an advisory body to the Vice President for Public Service, who would serve as its chairman. The other members would consist of the three campus officers in charge of public service under their respective chancellors, the Dean of

of the Division of University Extension, and the Director of the Cooperative Extension Service of the College of Agriculture. This group would give continuing attention to the public-service needs of the State that could best be met by the University of Illinois and to recommendations as to how the University should respond to these needs (e.g., whether by University-wide or by campus programs, or by some combination of the two). This committee would be regularly involved in the cycle of administrative activities related to planning, programming, budgeting, and evaluation for public-service activities at both general University and campus levels.

A second type of advisory body would be a faculty committee for public service, consisting mainly of representatives of the counterpart campus committees appointed to advise the campus-wide public-service officers. This committee would be concerned primarily with matters of general University policy concerning public service, including the relationships between public-service activities and on-campus educational programs.

Continuing Education

The Division of University Extension has administrative responsibility for the University's off-campus instructional programs, except those offered by the Cooperative Extension Service of the College of Agriculture. The Division conducts its courses and other activities primarily through the use of faculty members from the three campuses, although teachers may be secured on a temporary basis from other institutions. In the case of specialized training programs, such as the Police Training Institute, instruction is conducted mainly by the Division's own staff.

The Division's overall program is state-wide in scope and principally includes extramural courses (credit and noncredit), correspondence courses, short courses and conferences, technical-training programs, and other forms of instruction in which educational benefits to individual participants is the primary purpose.

University policy concerning continuing education. The University's programs of continuing education have been changing in recent years, in general conformity with the changing role of the University of Illinois within the State system of higher education. For example, the offering of lower-division courses has been progressively reduced to the point where such work is offered only under very exceptional circumstances. (An example would be the few courses offered at that level for teachers assigned to teach art in public schools who have had little academic preparation for such instruction.) Increasing emphasis has been placed upon specialized undergraduate courses and upon graduate-professional offerings.

A sustained effort will be made during the 1970's to achieve increasing coordination and optimal congruity between the on-campus and off-campus

instructional programs of the University. The attainment of this objective will be facilitated by the new organizational arrangements described above, which should result in greater involvement of the academic departments and colleges in planning and conducting continuing education.

Interinstitutional cooperation. The University expects to continue its cooperative efforts with other State universities and colleges to avoid unnecessary duplication and towards achieving effective coordination of programs. The Joint Council on Higher Education -- consisting of the presidents of these institutions -- has a standing committee on extension which meets quarterly to discuss common interests and problems. The eight members of the committee are deans and directors of the general extension programs of their respective institutions. A liaison representative from the Illinois Junior College Board attends all meetings. At two of the four yearly meetings (January and July), the committee reviews the schedules of course offerings proposed by the eight institutions for the following term -- adjusting them as seems appropriate.

The University is cooperating with several other Illinois and Iowa institutions in the operation of the Quad-Cities Graduate Study Center. Curricula for the master's degree are offered in three fields: business, education, and engineering. The University's participation in the Center's instructional program is through courses offered by the Division of University Extension. This experiment should provide useful experience to the institutions and the Board of Higher Education regarding the effectiveness of the consortium approach to graduate education for an urban area without a graduate institution.

Another type of interinstitutional cooperation was initiated recently by the University's Division of University Extension with the University of

Wisconsin. The two extension organizations have arranged to link their telephone network systems so as to permit extension students at either institution to take any course offered over the joint network in the field of engineering. The student enrolls and pays fees only at his own institution. (This plan is a variant upon the "Traveling Scholar Program" sponsored by the Committee on Institutional Cooperation -- an agency of the "Big Ten" universities and the University of Chicago -- under which an exchange of graduate students may be arranged.)

Another area of interinstitutional cooperation being cultivated by the Division of University Extension involves relationships with junior colleges. At present, an experiment is under way with two junior colleges in which courses in agriculture and in engineering are offered by the Division (via its telephone network) -- primarily for the benefit of students who might transfer to the University. The possibilities for expanding this program will be one of the problems to be studied systematically by the new campus officers responsible for public service, in collaboration with the campus colleges, the Division of University Extension, and the junior colleges. Other needs of junior colleges related to their own extension programs include: (a) courses for junior-college administrators and teachers in local extension programs (where pressures to offer work beyond the capabilities of the staff may be very great); (b) supplementation of the junior colleges' own extension courses in important areas where qualified local staff members are unavailable. These problems will be carefully studied by the Division (and by the Vice President for Public Service after he takes office), with a view to finding the most effective ways in which the University can contribute to the State's overall program of continuing education by working cooperatively with the junior colleges.

Telecommunication instructional systems. The "telephone network" being used in the Illinois-Wisconsin cooperative program described above involves the use of two lines to connect the lecturer (located on campus) with his remote class(es): one, a two-way audio channel; and the other, a two-way "writing" channel. Thus the teacher and the students may exchange vocal or written communications. The Division of University Extension has used this system with great success since experimentation began with it in 1967 -- particularly in engineering courses. Further expansion of the system is being planned.

The University expects during the 1970's to conduct further experimentation in continuing education through the use of electronic instructional media. Several techniques have been developed on the three campuses involving the use of television and computers in instruction, and these can be adapted to use in off-campus courses. An intercampus task force has reviewed these possibilities, and in its report has recommended that steps be taken towards the development of a telecommunication system for use in continuing education as well as for other purposes. These recommendations will be available for study by the Vice President for Public Service and his campus counterparts; and it seems likely that a feasible system (or systems) can be developed.

Continuing education for the professions. The fields of education and engineering have been the professions most prominently involved in the University's continuing-education programs thus far. The work in these fields will continue, and efforts will be made particularly to extend and diversify the offerings in engineering. Since the University has engineering colleges at two of its campuses, the Vice President for Public Service can be expected to stimulate special efforts to expand and improve continuing education in these fields through the collaborative efforts of the two Colleges of Engineering and the Division of University Extension.

The expansion of continuing education in the health fields, however, will be the professional area to which greatest attention will be given during the coming decade. The pilot program now under development at the Medical Center campus in the field of medical education has already been mentioned in discussions of the two emerging medical schools in Peoria and Rockford. This experimental program will continue under the administrative aegis of the Medical Center campus and the College of Medicine, at least to the point of the completion of the telecommunication system and adequate tests of the operational effectiveness of the program. At that time, a full review of the needs of other areas of the State for continuing education in medicine and other health professions will be undertaken. This study will include the question of whether the operation of the projected state-wide system for continuing education in these fields should remain the responsibility of the Medical Center campus or should be transferred to general University level. The following considerations might seem to argue for such a transfer: (a) the involvement of the Urbana-Champaign campus and perhaps also the Chicago Circle campus in education for the health fields; (b) the need to maximize the utilization and to minimize the costs of a state-wide telecommunication system, which might well require the use of it for other fields than the health professions. These problems will be investigated during the course of the more general study of the University's telecommunication needs mentioned in the preceding section.

The needs in other professional fields for continuing education will be carefully appraised -- including law, business, education, public administration -- and appropriate steps will be taken to develop and evaluate innovative programs where they appear to be justified. So far as feasible, the model procedure to be followed for the field of medicine will be adapted for

utilization in these other areas: (a) systematic study to determine what the educational needs might be; (b) experimental development of programs that seem best suited to meeting these needs; (c) continuing evaluation of the effectiveness of the programs.

Professional-Technical Services

The term "professional-technical services" was used above to describe the second broad category of public-service functions performed by the University. Although no absolute line of demarcation can be drawn between these activities and those designated by the term "continuing education," the distinction is fairly clear, and there are several advantages to maintaining it. For one thing, this general type of public service should be closely related to the disciplinary or professional unit providing the expertise, which suggests decentralization of operational responsibility -- in contrast to the full centralization of responsibility vested in the Division of University Extension for continuing-education programs. This means that professional-technical services will usually be provided and administered at campus level -- with primary responsibility resting upon the department or other unit in charge of the staff and other resources required. Such decentralization of responsibility should encourage faculty participation in these programs, which is obviously essential to their effectiveness.

The Cooperative Extension Service in agriculture and home economics is a prime example of the type of public service under discussion in this section. However, its state-wide scope and the somewhat indeterminate boundaries of its mission -- particularly in such fields as child development, home management, and community development -- have served in part as persuasive arguments

in other states for removing this program from the College of Agriculture and integrating it with a centralized, university-wide system of continuing education and other public services. No such change is currently envisaged at the University of Illinois, although the new Vice President for Public Service will be expected to continue the search for optimal organizational arrangements for the University's entire system of public-service units. In particular, it will be necessary to attack the operational problems arising from overlapping jurisdictions and from indeterminacy of missions shared by the Cooperative Extension Service and other units responsible for professional-technical services. These problems relate largely to public-service needs and programs in urban areas.

The Chicago area. For two reasons, the needs of the Chicago area for professional-technical services will be the dominant influence upon the University's public-service activities during the 1970's: (a) the magnitude and the complexity of the problems are greater there than elsewhere in the State -- and they have recently become more acute; (b) the University thus far has devoted proportionately less attention to uniquely urban problems than to other areas of public need.

All three campuses expect to participate in this general effort, and their planned emphases have already been discussed. Their capabilities and effectiveness, it should be strongly stressed, will be dependent upon the support given to their programs by the State and other governmental agencies. The on-campus programs proposed for the Chicago Circle campus, in particular, will need to be accelerated as rapidly as possible if the University is to meet its urban responsibilities for public service in the Chicago metropolitan area.

At general University level, probably the most important immediate task of the new Vice President for Public Service will be that of guiding the

mobilization of the relevant resources of all three campuses for a concerted attack upon critical problems of the Chicago area. The need for University-wide planning and coordination will sometimes be critical, and from time to time it may become necessary to organize special task forces under general University auspices in order to bring the full impact of the University's multidisciplinary resources to bear upon certain types of problems.

University-wide agencies. The University now has three units with public-service responsibilities that are administered as "general University" organizations: the Institute of Government and Public Affairs, the Institute of Labor and Industrial Relations, and the Survey Research Laboratory. All three have headquarters at the Urbana-Champaign campus, but they are University-wide as regards their research and public-service missions. (The Institute of Labor and Industrial Relations also offers graduate work leading to the M.A. and Ph.D. degrees, and this aspect of its program is conducted under the aegis of the Urbana-Champaign campus.)

The two institutes provide important services in their respective fields to branches of State government. For example, the Institute of Government and Public Affairs conducts policy studies on issues of concern to legislative bodies; and its Director has served as the executive staff officer for the 1970 Constitutional Convention. The staff of the Institute of Labor and Industrial Relations has played a central role in the development of the State's manpower policies and its program for improved utilization of human resources.

The Survey Research Laboratory's primary function is that of making its technical resources for survey research available to departments and faculty members at all three campuses. It assists in instruction and in the design of research; and conducts survey research for faculty members, graduate

students, and administrative units. In addition, the Laboratory makes survey studies for public bodies in Illinois -- thus performing a public-service function of growing importance.

In addition to their regular programs, these three units -- in collaboration with the Jane Addams Graduate School of Social Work and members of certain social-science departments -- have been discussing plans for a multidisciplinary program concerned with the effectiveness of the delivery of public services in a model county. A proposal for the support of such a program has been submitted to the recently established Illinois Institute for Social Policy. The study would focus on the delivery of State services in the fields of public welfare, health, and manpower training and utilization.

A Regional Office in Peoria

The University has recently brought together into a regional office in Peoria its current public-service programs being conducted in that area in agriculture and home economics extension, 4-H activities, continuing-education courses, services for crippled children, and the developing Peoria School of Medicine. The office will partly support the educational activities now under way there and will partly serve as a base for regional coordination of the University's services in the future. It would not administer programs but would provide support for any type of University activity conducted in Peoria or its environs.

The educational projects of broad interdisciplinary character that are now under way in the Peoria area include: communications; business, industrial technology, and manpower development; family living, cultural and consumer affairs; community and economic development; medicine and the health

sciences; agriculture, natural resources, and environmental improvement; and 4-H and other youth programs.

All together, these varied University activities provide the setting for a systematic analysis and evaluation of the "outreach" functions of the University. Such a study can be linked to the multidisciplinary project outlined in the preceding section relative to the delivery of State services. A "systems analysis" of the combined State and University public-service operations would have important methodological value, and it should also yield significant insight into the conditions influencing the effectiveness of the two sets of programs.

Future Organizational Directions

The present organizational structure and policies of the University of Illinois system rest on the basic premise that its educational functions of instruction, research, and public service should be conducted at campus level to the fullest feasible extent. Even the exceptions to this general policy represented by the programs discussed in the present chapter involve close relationships with the campuses.

The development plan for the 1970's presupposes essentially the continuation of the present organizational pattern and its associated policies -- under the assumption that they will allow the University to meet its projected educational commitments to the State. The appointment of a Vice President for Public Service, however, will create the basis for substantial expansion of general University programs if that seems necessary to effective University response to the State's needs. More specifically, to reemphasize a point made in discussing public service for the Chicago area: ". . . from time to time

it may become necessary to organize special task forces under general University auspices in order to bring the full impact of the University's multidisciplinary resources to bear upon certain types of problems." Depending upon the number and magnitude of such programs -- in addition to those of the existing institutes and other general University units -- further organizational changes might become necessary in order to provide an appropriate administrative structure for these important University-wide functions.



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